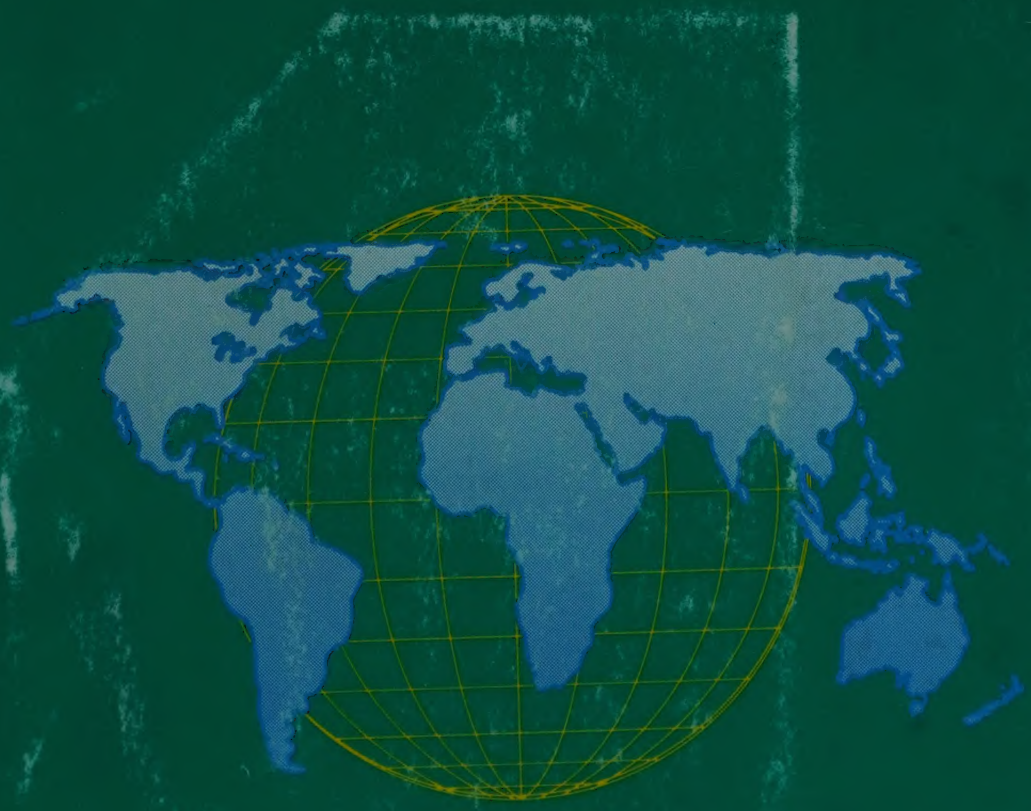
E N H R

ESSENTIAL NATIONAL HEALTH RESEARCH

A Strategy for Action in Health and Human Development



Task Force on Health Research for Development

02020

COMMUNITY HEALTH CELL
Call No : COMH-300 N9
Acc No : 02020
Author : ESSENTIAL NATIONAL
HEALTH RESEARCH
... for Action in
...am Develop.
of | Signature

E N H R

ESSENTIAL NATIONAL HEALTH RESEARCH

A Strategy for Action in Health and Human Development

Task Force on Health Research for Development Secretariat
c/o UNDP
Palais des Nations
CH-1211 Geneve 10
Switzerland
Phone: (41 22) 798 57 83
Fax: (41 22) 798 75 24

© 1991 Task Force on Health Research for Development

COMMUNITY HEALTH CELL
326, V Main, I Block
Koramangala
Bangalore-560034
India

02020

COMH 300
N 91

Foreword

The declaration of Alma Ata in 1978 to achieve the goal of *Health for All* through primary health care by the year 2000 envisaged an equity oriented health strategy and imparted a sense of urgency. Since then, countries have been developing their health care systems and building infrastructures in an attempt to achieve this goal.

Some progress has been made, despite a history of limited resources being allocated to health in most developing countries coupled with the global economic recession and debt crisis in the 1980s, but, by and large, the progress has been uneven, especially in the least developed countries where the poor, and women and children are worst affected. Today's health scene is characterized by sharp inequalities in levels of health and of health care both between and within countries and yet, the world community has the ability to ensure that the fruits of health programs are shared more equitably by all of mankind.

The Commission on Health Research for Development, after a world-wide review of health conditions, has emphasized the importance of research in health for development on the basis of equity and social justice. The Commission and its successor, the Task Force on Health Research for Development, have advanced the idea of **Essential National Health Research** (ENHR) as an integrated strategy to facilitate the attainment of this goal by involving communities, researchers, and policy and decision makers.

This monograph, put together by Dr. Catherine Michaud with the guidance of an editorial committee consisting of Jorge Barreto, Julio Frenk, Malaquias Lopez-Cervantes, and Chitr Sitthi-amorn, and chaired by Dr. A.O. Lucas, describes the first steps taken in concretizing the idea of ENHR in selected countries as a learning experience for further evolution of this approach to facilitate health development on an equitable basis.

National research capability building and its continued reorientation is a vital step in the promotion of an ENHR strategy. There are no instant solutions to this — capacity building is a long term exercise measured in decades, and a critical mass of researchers needs to be created. It is not enough to build traditional discipline-oriented capabilities; it is also necessary to foster attitudes to promote interdisciplinary research and create linkages among a wide spectrum of research disciplines.

The challenge now is to translate the ENHR concept into an operational program with the establishment of appropriate institutional arrangements and mechanisms at the country level. There is a groundswell of interest in ENHR worldwide. Researchers, policy makers, health care providers, and above all, communities, need to join hands together at the country level to work out, through a process of partnership, ways by which ENHR could be established, nourished and sustained.

It is the hope of the Task Force on Research for Development that this monograph will serve to stimulate wider debate and to aid in the implementation process by interested countries. As experience accumulates, a conscious tuning and retuning of approaches will be needed to suit varying contexts and differing environments.

The Task Force wishes to put on record its deep appreciation of the contribution made in this effort by Dr. Catherine Michaud, and by her advisory editorial committee, in this very important endeavour.

V. Ramalingaswami
Chairman, Task Force on Health Research for Development
Geneva, Switzerland

October 1991

Contents

Preface 1

Chapter One: What Is ENHR? 3

Chapter Two: Implementing ENHR — The Seven Elements 13

- Element 1: ENHR Promotion 13
- Element 2: National ENHR Mechanism 18
- Element 3: Setting Priorities for the ENHR Action Plan 24
- Element 4: Strengthening Research Capacity 29
- Element 5: Networking 34
- Element 6: Mobilizing Financial Resources 39
- Element 7: Evaluation of ENHR 44

Chapter Three: ENHR Process in Selected Countries 49

- Mozambique 49
- The Philippines 51
- Thailand 54
- Mexico 57

Chapter Four: Challenges Ahead 61

Appendices 65

Country Bibliographies 71

Acknowledgements

The ideas behind this manual arose out of the sharing of experiences among all participants in the first International ENHR Workshop in Pattaya, Thailand (November 1990). The book, commissioned by the Task Force on Health Research for Development, is the result of close collaboration and cross-fertilization of ideas among all the members of the editorial board between January and July 1991. The board held two three-day meetings: one in Geneva in January 1991 and the second in Cambridge, Mass. in May 1991. Country summaries and detailed examples of ENHR activities were furnished in part by members of the board and in part by other contributors from the six countries used here to illustrate each element of the ENHR process.

The editorial board would like to thank all Task Force members, Sunil Chacko, John Donohue, John Evans, Davidson Gwatkin, and Yvo Nuyens, for their constructive comments on the manuscript. Finally, the manual would not have been possible without the generous support of the MacArthur Foundation.

Editorial Board

Adetokunbo O. Lucas (Professor of International Health, Harvard School of Public Health), *Chairman*

Catherine Michaud (Research Associate, Harvard Center for Population and Development Studies), *Author*

Debra Malina (Editorial Consultant, Harvard Center for Population and Development Studies), *Editor*

Advisory Committee/Contributors

Jorge Barreto (Director, National Institute of Health, Mozambique)

Julio Frenk (Director-General, National Institute of Public Health, Mexico)

Malaquias Lopez-Cervantes (Director of Epidemiologic Research, Secretariat of Health, Mexico)

Chitr Sitthi-amorn (Professor of Medicine and Public Health, Chulalongkorn University, Thailand)

Other Contributors

Brazil
C.M. Morel
C. de Albuquerque Possas

Mexico
J. L. Bobadilla
A. Martinez Palomo
J. Sepulveda
S. Vandale

Mozambique
J. Cliff
A. Damasceno
J. Schwalbach
R.A. Pereira

The Philippines
D.P. Hey
M.A. Lansang
T.P. Maramba, Jr.
A.P. Perlas
M. Saniel

Zimbabwe
S.K. Chandiwana
T. Katsumbe
S. Mtero
C. Vundule

Thailand
S. Chunharas

Preface

In recent years, several international agencies have launched major initiatives that aim to stimulate and support development, especially in the least developed countries. In the health sector, the 1978 International Conference at Alma Ata produced a landmark declaration that set the goal of **"Health for All By The Year 2000"** based on the strategy of primary health care. Several complementary activities have since been launched in support of this goal —for instance, the Water and Sanitation Decade, the Safe Motherhood Initiative, and the immunization and oral rehydration programs.

Developing countries have achieved significant gains in health in the past decades, as shown, for example, by declining mortality and morbidity statistics, and by increasing life expectancies, but much remains to be done. Recently, the Commission on Health Research for Development, an independent international body, found gross disparities in health, with striking differences both between countries and within them. The Commission noted that developing countries were not making effective use of research, especially the type of research they need for guiding policy and action. It identified research as the key to equity in development and recommended that each country undertake **Essential National Health Research (ENHR).**

Since the Commission completed its work, its sponsors have established a Task Force on Health Research for Development to develop strategies for the implementation of the Commission's recommendations, in particular the operationalization of ENHR, and to support pilot activities at country level. The Task Force has organized consultations with various developing countries in order to assist in the development of ENHR-related programs.

The concept of ENHR has received widespread acceptance by the international health community, but the process still requires definition at country level. This manual outlines a generic process of implementation for ENHR based on early experiences in a limited number of countries, and it should be read as a practical companion to the Commission's report, *Health Research: Essential Link to Equity in Development.*

The first international conference on ENHR took place in Pattaya, Thailand in November 1990. On the basis of their experiences in their own countries, participants identified seven elements for the implementation of ENHR. They suggested that the recommendations of the group be disseminated to a broad audience, to provide guidelines for all those who are interested in initiating or broadening ENHR in their countries, as well as for international agencies, philanthropic foundations, non-governmental organizations and anyone who is involved in promoting the global ENHR movement. This book is the vehicle for that dissemination. Along with definitions of the seven elements, it includes a selection of examples drawn from a few countries' early experiences with ENHR, in order to clarify the nature of the process being described. Through the combination of theoretical background and practical applications, the manual aims to render the ENHR strategy comprehensible and useful to those involved in health and development in other countries.

Chapter One: What is ENHR?

Introductory note: the origins of ENHR

Concerned that important health needs in the developing world were not being adequately addressed, a group of foundations, bilateral donors, and international agencies began in 1987 to consult health leaders from developing countries and representatives of interested agencies. Their deliberations led to the establishment of the Commission on Health Research for Development (CHRD). The specific mandate of the Commission was to produce an independent expert evaluation of the state of health research relevant to developing countries, and to make recommendations for action. The twelve Commissioners, eight of whom were from developing countries, represented a wide range of expertise and experience in health and development, with professional backgrounds in the biomedical, social, and nutritional sciences, law, economics and management.[1] Officially launched in October 1987, the Commission concluded its activities in June 1990, after publishing its report, *Health Research: Essential Link to Equity in Development.*

The Commission found that even though developing countries have made some significant progress in health and development in recent years, the progress is uneven and tragic inequalities persist both between and within nations. The critical finding of the Commission's study was "a gross mismatch between the burden of illness, which is overwhelmingly in the Third World, and investment in health research, which is overwhelmingly focused on the health problems of the industrialized countries." Many developing countries seriously neglect the research that they need to inform decision making on health actions, to improve efficiency and effectiveness of action for health, and to ensure that available resources achieve maximal results. To fill this major gap in health research, and to achieve equity in health and development, the Commission developed the concept of "Essential National Health Research" (ENHR). The commissioners were convinced that it is essential for each developing country to establish and strengthen an appropriate health research base:

> To understand its own problems;
> to enhance the effectiveness of limited resources;
> to improve health policy and management;
> to foster innovation and experimentation; and
> to provide the foundation for a stronger developing country voice in setting international priorities.[2]

The Commission consulted with a broad range of experts in developing countries to gather information and to test its ideas. This process launched a worldwide movement for the promotion of ENHR efforts in developing countries. The findings and recommendations of the Commission have been widely discussed since the Report was formally presented at the 15th Nobel Conference in Stockholm in February 1990.

Acknowledging the centrality of research to health, the 43rd World Health Assembly (WHA) focused its Technical Discussions in May 1990 on "The role of health research in the strategy for Health for All by the Year 2000 (HFA/2000)." During extensive discussions at plenary and group sessions, participants repeatedly referred to the need to establish and strengthen ENHR in their respective countries. It was agreed that ENHR ought to be an integral part of national strategies and plans for achieving HFA/2000. WHA Resolution 43.13, dealing with the Technical Discussions, urges bilateral and international development agencies, NGOs and philanthropic foundations to increase their support for essential health research and research capacity building.[3]

There is broad consensus in the international health community about the need to implement the Commission's main recommendations, which include:

1. **Development of ENHR** in each country;

2. **Strengthening of international partnerships** for the development of transferable knowledge that can solve common problems;

3. **Increased financial support** from national and international sources to intensify research on health problems of developing countries; and

4. **Establishment of an international forum** for reviewing the progress of health research for development and for advocating necessary improvements.

What is ENHR?

Aspects of the ENHR strategy

Since the Commission published its report, there has been much discussion and debate about the exact meaning of ENHR:

- How does ENHR differ from the established systems of research currently operating in developing countries?
- Is ENHR another name for epidemiology, for health services research or for policy research?
- If ENHR deals with what is "essential," which elements of research are judged to be non-essential?

ENHR is an integrated strategy for organizing and managing research, whose defining characteristics include its goal, its content and its mode of operation:

- ENHR's ***goal*** is to promote health and development on the basis of equity and social justice.
- ENHR's ***content*** includes the traditional types of research commonly described as epidemiology, social and behavioral research, clinical and biomedical research, health systems research, and policy analysis; but it is specifically oriented toward the most important problems affecting the population, with particular emphasis on the poor, disadvantaged and other vulnerable groups whose health needs are often overlooked or ignored.
- ENHR's ***mode of operation*** is characterized by inclusiveness, aiming to involve researchers, health care providers, and representatives of the community in planning, promoting and implementing research programs. In order to ensure appropriate input from various disciplines, ENHR should promote multidisciplinary and intersectoral research. It should establish mechanisms to close the gap between research and application, ensuring that the results of research are effectively translated to action; that objective scientific analysis guides policy and action; and that those involved in setting priorities for health research take note of problems identified by health care givers, policy makers and the public at large.[4]

ENHR is an integrated strategy for organizing and managing research.

ENHR implies the use of scientific methods to analyze health situations, identify problems, and solve them. It would promote the research effort needed by each country to assess its major health problems and to develop the responses that are most appropriate to its own circumstances. The essence of ENHR is an intersectoral, multidisciplinary scientific approach to health programming and delivery. Since the goal of ENHR is to improve health and equity in developing countries, it is an important component of primary health care and of the global effort to promote development.[5]

Defects in current systems

ENHR was conceived as a corrective to frequent points of failure in existing research systems:

- Policy makers often do not make use of research findings in decision making;
- Managers of health care programs do not always use research results, nor do they apply scientific methods in planning, monitoring, and evaluating services that they deliver; and
- Researchers often do not address the health problems that are perceived as top priorities by policy makers, health care managers and the people.

This situation is largely attributable to the fact that researchers, policy makers and health care providers tend to work in separate compartments, without effectively interacting with each other. The ENHR approach would attempt to overcome these barriers by promoting an intersectoral and multidisciplinary approach to research and by strengthening policy-action-research linkages.

Country-specific and global health research

EHNR includes two complementary kinds of research efforts: country-specific health research and global research.

Country-specific health research

Many important questions about the patterns and determinants of health and diseases can only be answered by research done in specific localities (see box 1.1). The Commission used the term "country-specific" to refer to research that identifies and deals with such local questions, but it found that developing countries tend to neglect this kind of research. The objectives of country-specific research are to identify the main diseases and conditions that continue to create an unnecessary burden on society, to

assess the effectiveness of control measures, and to identify technical and cultural obstacles to successful implementation of health programs. It provides deeper understanding of the functioning of the health services, identifying gaps in coverage and access, and helps to promote equity. It also provides insights into the impact on health of the policies of other sectors. Such research results, while critical in the local context, may not be transferable to other countries or even from one part of the country to another. Not only do health conditions vary from place to place, they also change in the same locality over time. The studies need to be repeated, so as to monitor change as the basis for decision making.

Country-specific research also enables health authorities to monitor and explain trends in the process of health transition. Often, even as developing countries are overcoming the traditional problems of communicable diseases and malnutrition, and as populations are adopting new diets and habits, chronic degenerative diseases like ischemic heart disease, stroke, and non-insulin-dependent diabetes become increasingly prominent as causes of disability and death.

Global health research

Country-specific research also identifies important health problems for which new preventative and diagnostic tools and therapeutic interventions are needed. In addition, it draws attention to the need for fundamental research on human behavior, communication patterns and social organizations. It thereby

BOX 1.1

Country-Specific Research

"Research on country-specific problems addresses health needs, disease profiles, resource allocations, program evaluation, health financing and other issues concerning the objectives and operations of a country's health system."

Research on country-specific problems will seek answers to a variety of questions; examples are:

Patterns of health and disease

- What are the common causes of death in various age groups, in different parts of the country, and in various subgroups (ethnic, religious, etc.) of the society?
- What are the patterns of mortality and morbidity in different high-risk groups — infants, children, pregnant women, etc.?
- What is the prevalence of common communicable diseases (malaria, schistosomiasis, HIV infection, etc.)?
- Which are the common cancers in the population?

Determinants and risk factors

- What is the effect of geographical, environmental, economic, social and behavioral factors on the incidence, prevalence, severity and outcome of specific diseases and conditions?
- What are the most important risk factors in the occurrence of common cancers, sexually transmitted diseases, abuse of alcohol and illicit drugs, and other major health problems?

Operation and utilization of health services

- What factors limit full immunization of children according to the recommended protocol?
- What proportion of pregnant women receive pre-natal care, and how many deliver under supervision of trained persons?
- What factors influence the demand for and utilization of pre-natal services?
- What means are available to enlarge the number of households that have access to a safe, protected water supply?
- What proportion of women of childbearing age are using effective family planning methods, and how can that proportion be enlarged?
- How are health services financed for different groups in the population, and how can greater financial resources for health be mobilized?
- What are the effects of policies outside the health sector —agricultural, economic and educational — on the health status of the population?

helps to generate a priority list for relevant biomedical and social science research.

The discovery and development of new technologies often require capabilities, infrastructure, and investments that are beyond the means of any single country. The results of such research are usually cumulative and transferable, and can lead to major technological breakthroughs which can be shared and applied in many parts of the world. The Commission has called such research "global health research." All countries, developing and industrialized, should participate in the global research effort within the limits of their human and financial resources. They should build up their capacity to participate in global research. (See box 1.2.)

BOX 1.2

Global Health Research

Researchers in developing countries are making contributions to the effort required to develop new technologies for tackling unsolved health problems:

■ Definition of specifications
Scientists, health care givers and the people must participate in defining the specifications of new technologies. For the control of diseases in developing countries, the ideal agents should be highly effective, simple to apply, safe, affordable and compatible with local cultures. This would facilitate the adoption of the technologies by the health services, and in particular by the primary health care system.

■ Basic biology of pathological agents, their vectors and interactions with the human host
This includes research on the biology of parasites and other infectious agents that appear in various parts of the developing world, causing tuberculosis, leprosy, malaria, the trypanosomiases, amebiasis, the leishmaniases, etc.

■ New and improved technologies
This includes the search for new drugs, diagnostic tests, vaccines and vector control measures for dealing with infectious diseases, as well as new therapeutic approaches to genetic disorders peculiar to certain regions and populations — e.g., hemoglobinopathies, specific nutritional defects.

The Commission concluded: "Exactly what mix of research is essential must be defined by each country, but it will contain a measure of two basic components, country-specific and global research."

The next sections of this chapter will review in greater detail the contribution of ENHR to health and development; the major strategies of ENHR; the international implications of national ENHR efforts; and the challenge posed by the implementation of such efforts.

The expected contributions of ENHR

What benefits can a country expect to derive from adopting ENHR? In its report, the Commission proposed ENHR as a means of enabling each developing country:

- to develop a scientific information system as the basis for objective analysis of the health situation in different parts of the country and in different segments of society;
- to evaluate and enhance the impact of health interventions; and
- to foster innovation and experimentation to improve current programs and to address unsolved problems.

The expected contributions from ENHR will be discussed under three main headings:

Expected Contributions	Section
"to understand [the country's] own problems"	1. health information and situation analysis.
"to improve health policy and management"	2. enhanced impact of limited resources.
"to foster innovation and experimentation"	3. promotion of global health research.

1. Health information and situation analysis

The first objective of ENHR is to provide and update the scientific knowledge base required for decisions about health actions and for the establishment of priorities. This type of research is traditionally described as epidemiological and community-based social and behavioral research.

The information that these studies generate is necessary to ensure that health strategies meet the needs of the population; to monitor changes in the

health situation; and to define emerging problems. All members of the partnership for health and development, consisting of decision makers and health care providers, researchers, donor agencies, bilateral and multilateral aid agencies, and the public at large, need information that enhances their understanding of problems and enables them to fulfill their respective roles effectively. These partners in health must work together in pursuing their common interest.[6]

a) *Policy makers and health care providers* require information on trends in population and health patterns, and changes in causes of morbidity and mortality; on the demand for and utilization of health services; on people's needs and perceptions about health problems; on available technologies and their costs; and on the comparative effectiveness of alternative methods of tackling specific problems, deploying technologies and delivering health care.

b) *Researchers* require information on unresolved scientific, technical and operational questions as the basis for establishing their agendas.

c) *People* require information on what they can do as individuals, families, and communities to safeguard and promote health; on how best to use available services; and on how they can strengthen the political will to support health programs that include research.

d) *Donor agencies and international programs* require information on national health-care and research priorities for the guidance of their funding and technical assistance programs.

Despite the efforts already underway, information on health problems often remains incomplete; important elements of the situation analysis required for decision making are often unavailable. Furthermore, the information is often scattered within the health system and in other sectors, both public and private. Few developing countries have established systems for collecting and storing research findings that are relevant to health. It is necessary to improve health information systems and and to make sure that those who need it have access to data and research findings.

As a first step, it would be valuable to take an inventory of past and current health research projects and to analyze and interpret the results of completed studies. This would provide a better understanding of the health situation prevailing in each country. Some countries have already embarked on this process. For example, the National Epidemiology Board of Thailand has recently undertaken an analysis of the health situation in the country. In Mozambique, the government is collecting the information that it needs to review and implement health strategies in the light of displacement of people by war. In Zimbabwe, the government has given priority to the establishment of a National Health Information System.

An objective knowledge base is fundamental to the definition of health priorities and to the promotion of equitable allocation of scarce resources. ENHR would provide stakeholders in health with information which they need in order to participate effectively in priority setting for both health action and research.

The first objective of ENHR is to provide and update the scientific knowledge base required for decisions about health actions and for the establishment of priorities.

2. Enhanced impact of limited resources

The second objective of ENHR is to ensure the best use of available resources. This type of research is usually described as "health services research," "health systems research" and "policy research." One of the keys to human resources development lies in deciding how to allocate scarce resources, for example, between expensive hospitals and primary health care facilities, between urban and rural services, between powerful groups such as wealthy land owners and weaker groups such as the homeless. The data collected would provide a rational basis for selecting alternative strategies — e.g., between specific approaches like the use of drugs or vaccines and broad measures like environmental sanitation or personal hygiene in the control of specific infections. By providing information about available technologies, by testing alternative approaches, and by aligning delivery systems to local situations and cultures, ENHR would create a knowledge-based health system that could ensure equity of health policies and cost-effectiveness of health programs.

The complex process of policy making, planning, and management of health services aims at achieving the maximum possible improvement in the health of the population in the most cost-effective manner, and at the same time at ensuring equity in the allocation of resources by identifying and paying particular attention to the most vulnerable groups within the population (women, children, the poor, etc.).

There is increasing recognition of the value of health systems research for promoting development of services. Such research includes the study of distribution of and access to health services, patterns and determinants of demand and utilization, cost of care

The third expected contribution from ENHR is the promotion of research that aims to tackle difficult and unsolved problems, especially where the existing technologies are judged to be inadequate for bringing the problems under control.

to health care providers and users, efficiency and effectiveness of the services, and innovative approaches to the delivery of quality health care.

Once aware of the range of available tools and methods, health care providers could use objective analysis and, where necessary, research to select the most appropriate interventions. Once appropriate technologies have been selected, it is critical to ensure their effective use. Proper communication is important for increasing awareness and understanding of existing technologies, such as oral rehydration solutions, fertility control methods, and impregnated bed nets to prevent malaria transmission. Research can provide valuable clues as to the most effective methods of communicating health information to the public. The many different types of campaigns being conducted to promote awareness about risk factors associated with the transmission of HIV infection illustrate the diversity of possible approaches for conveying a similar message. Ideally, health care providers and users should work together in defining the best methods for applying the selected technologies.

In recent years, people are paying increasing attention to the role of behavioral and social factors in the pattern of health and disease. Social scientists must be closely involved in every stage of health research, in refining health interventions and increasing their impact.

An aim of ENHR is to ensure that relevant input from other sectors is not ignored. Researchers would collate relevant data on the environment, agriculture and food production, economic trends and policies, education (especially female literacy), and other factors, and would analyze their impact on the health of the community. An important attribute of ENHR is the involvement of scientists from all relevant disciplines in collaborative research studies and policy analysis.

3. Promotion of global health research

The third expected contribution from ENHR is the promotion of research that aims to tackle difficult and unsolved problems, especially where the existing technologies are judged to be inadequate for bringing the problems under control. Even where the most appropriate and cost-effective approaches to health care are provided, available technologies do not meet all the challenges of old and new health problems. Apart from adapting existing technologies to fit local situations, there is a clear need to discover new tools — diagnostic and vector control methods, drugs, vaccines — to deal more effectively with residual problems. ENHR would foster this kind of innovation and experimentation.

In the past few decades, there has been a revolution in the biological sciences, which has equipped scientists with powerful research tools — the methods of immunology, biochemistry, molecular biology and genetic engineering. These tools are being applied successfully to fashion new technologies for the diagnosis and treatment of cancer and other diseases of high priority in industrialized countries. These biomedical sciences also offer the hope of producing new and improved methods of controlling diseases peculiar to developing countries, especially the tropical parasitic diseases.

The situation analysis and problem identification from country-specific research would highlight the residual problems which rank as high priorities for this type of global research. For instance, in Brazil, leading scientists are working on the immunology and molecular biology of Chagas' disease and leishmaniasis with the aim of fashioning new diagnostic and prophylactic measures. Similarly, in Mexico, basic research is being done on amebiasis and cysticerosis, among other diseases. In the global effort to develop vaccines, scientists in developing countries are collaborating in unravelling the immunological responses to malaria infection; they are also participating in the development and evaluation of possible anti-malarial drugs.

The research effort required to generate new and improved tools is quite formidable. Few countries can generate the critical mass of researchers and the infrastructure required to complete the discovery and development of new drugs, vaccines and similar products. Scientists in developing countries are, however, making useful contributions of innovative ideas and research results which provide the building blocks for new products. For such contributions to have their maximal impact, researchers must be linked with the worldwide health research system — both to draw ideas and results from elsewhere, and to contribute effectively to worldwide scientific advances.

Major ENHR strategies

One major challenge in developing ENHR is to generate problem-solving and action-oriented research programs that will tap the skills and knowledge of scientists from a wide range of disciplines. The other challenge is to create a dynamic process linking policy, action and research, thereby ensuring that research findings will be promptly and effectively applied in health programs. (See box 1.3)

Intersectoral and multidisciplinary approach

Problem-driven and action-oriented, ENHR would deal with "any health problem that burdens people in the country, with the objective being to lessen the level of disability and death it causes." This means that a wide variety of familiar research disciplines and well-recognized research approaches have to be included to address the multiple facets of health issues. These may include disciplines related to the three major health research fields: laboratory-based biomedical research, hospital-based clinical research, and community-based public health research. In addition, it would involve research in sectors other than health. Apart from biomedical scientists, economists, social and behavioral scientists, communication scientists and others can play an important role. The exact mix of research disciplines involved varies, since it is defined by the nature of the problems to be tackled.

Experiences in such collaborative research are still limited, but have demonstrated their value. Health systems research, for instance, is a multidisciplinary approach that has already been successfully implemented in a number of countries and is an important element of ENHR. A number of obstacles to effective research integration remain, however, and have to be overcome if countries wish to optimize the benefits of health research.

Barriers to intersectoral and multidisciplinary research

Intersectoral and multidisciplinary research is often hampered by a lack of effective communication across disciplines, by lack of knowledge about the skills involved in other sciences, and by low regard for public health disciplines. Different disciplines use different tools, different scientific languages and different concepts, and have different applications. The benefits of overcoming disciplinary barriers are nevertheless substantial.

The containment of training and research activities in separate academic and research institutions for the various sciences generally impedes the cooperation necessary for interdisciplinary research. Respect for other disciplines is fostered best in multidisciplinary institutional settings or through networks that encourage cross-fertilization of ideas and collective thinking among the broad range of disciplines and fields contributing to health research.

Research-Action-Policy Linkages

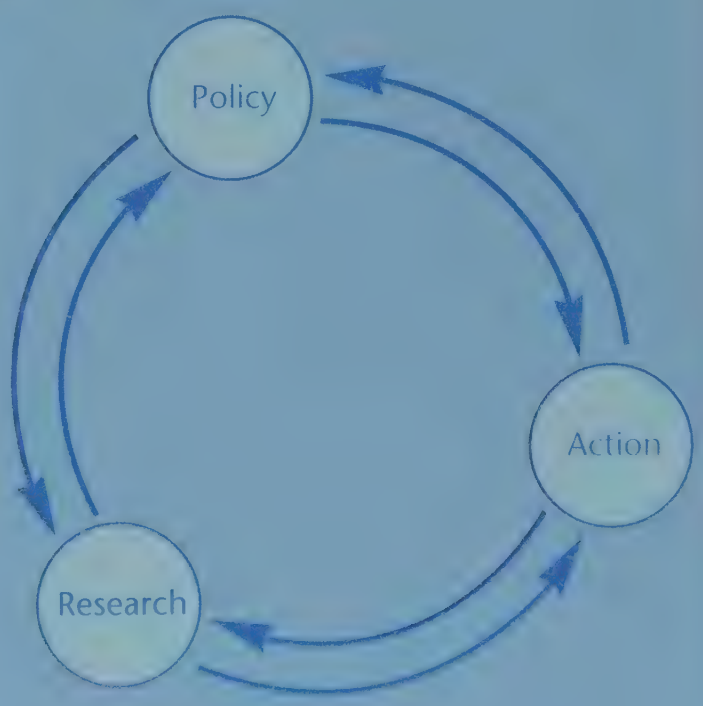
"In developing countries, although there is a research infrastructure both in the Ministry of Public Health and in the universities, acquisition and utilization of accurate and relevant knowledge have not satisfactorily progressed, due to many constraints....[including] lack of national health research policies, effective research management and support, good quality and relevant health research utilization."

—Prawase Wasi, Chairman of the National Epidemiology Board, Thailand

Strong linkages between research, action and policy have been established in several countries and have demonstrated their value (see box 1.3). These, however, often remain isolated efforts which are neither sustained nor generalized. To maximize the utilization of research findings, ENHR would estab-

BOX 1.3

The ENHR Loop



ENHR establishes a dynamic relationship among policy, action and research sectors. Strengthening these linkages will increase the demand for and expand the utilization of research results.

lish a dynamic relationship between policy, action and research. A national mechanism is required to establish steady communication channels among all partners in health, at various levels of the health system, and to sustain a dynamic relationship among them. Strengthening of the linkages would increase demand for health research, promote political and financial commitment of the government to support health research, and expand the use of research results in practical programs. (See box 1.4.)

Each country will have to define the structure that can best address its health research needs. Many countries already have conventional structures, such as medical research councils, research and planning departments of ministries of health, councils on science and technology, and national universities commissions. These entities may not be able to ensure inclusiveness of all essential partners in health, sustainability beyond changes in government, and credibility. In many instances, therefore, new or modified structures may have to be created.

International implications

Country-specific research would generate scientific and locally relevant knowledge that govern-

BOX 1.4

The Hepatitis B Control Program in the Philippines

Worldwide, 300 million people are chronic carriers of the hepatitis B virus. The virus causes liver disease and a common form of cancer: Primary Hepatocellular Carcinoma.

The need to control hepatitis B assumed a note of urgency when, in the early 1980s, efficacious and safe vaccines were developed against the virus. These vaccines had potential for the prevention of HBV infection and its chronic sequelae, but were introduced into the Philippines at a market price that was beyond the means of most people. Several years later, an aggressive pharmaceutical company marketing campaign focusing on the HBV "epidemic" produced widespread concern about viral hepatitis, and increased demand, especially from the labor sector and schools, for mass immunization. This public clamor compelled the Department of Health (DOH) to confront the issue. In March 1988, representatives of the DOH, after consultation with hepatitis research groups, briefed the Congressional Committee on Health on the viral hepatitis problem, and in August 1989, the DOH announced a national Hepatitis B Control Program.

The program was based on scientific evidence gathered over several years of sustained research efforts in various disciplines. The existence of intersectoral links among hepatitis research groups, program managers and policy makers, and the openness to scientific studies exhibited by top management, ensured the utilization of relevant research findings.

Because of the poor response of primary hepatocellular carcinoma to therapy, the liver study group at University of Manila intensified its effort to identify the causative agent of the disease. The group found a strong association between the hepatitis B carrier state and chronic sequelae such as liver cirrhosis and primary hepatocellular carcinoma.

Epidemiological studies quantified the magnitude of the problem, and identified populations at highest risk. At least 5.6 million Filipinos may carry the hepatitis B virus and be capable of infecting others. While the average prevalence rate of hepatitis B surface antigen among various Filipino groups was 12 percent, case-control and community-based cohort studies showed that the risk of developing the carrier state was particularly high when the infection was acquired at birth, during infancy or in early childhood.

Based on these findings, the Hepatitis B Control Program was built around three main components: immunization of newborns; protection of blood supply; and health education and public information. It consequently gave rise to the DOH policy of integrating immunization against hepatitis B virus into the Expanded Program of Immunization (EPI).

The DOH also stressed the need for further technical and feasibility studies to simplify the delivery of vaccines, and to lower the cost of vaccination, and emphasized that public funds should be targeted at high-risk groups.

The liver study group of the University of the Philippines–Philippine General Hospital (UP-PGH), in collaboration with WHO, is now carrying out medium-scale production of reagents to determine HBV markers in the Research Institute for Tropical Medicine.

ments, health care providers and people need in order to articulate their problems and to determine national research and action plans. The benefits of such plans reach beyond national boundaries: They give developing countries a stronger voice, empowering them to express their priorities in international forums.

The definition of national research priorities establishes a fresh basis for dialogue with international programs and donors. This will facilitate the process of reconciling national needs with the mandates, charters and agendas of external agencies. Such collaboration should enhance the cost-effectiveness of health programs and increase equity in the allocation of resources, both national and international. In the absence of clearly enunciated national research priorities, the interests and perceptions of foreign donors may dictate the local research agenda.

BOX 1.5

The Seven Elements for Implementing ENHR

Element I: Promotion & Advocacy

The aim is to sensitize researchers, policy makers, health care providers and the public to the need for a new strategy for managing health research. It involves the promotional activities by prime movers who will initiate and promote dialogue at all levels of the health system and mobilize support for the new approach from scientists in various disciplines, public and private health care givers, and the community at large. Some countries have initiated this phase through a formal launching ceremony. This provides a useful opportunity to capture the attention of key groups and critical constituencies. The prime movers must sustain their promotional effort over a long period and, through advocacy, obtain the involvement of other relevant groups and disciplines.

Element II: ENHR Mechanism

The aim is to create a durable but flexible mechanism for promoting and coordinating health research. Whether this is accomplished by modifying existing structures or creating new ones, the objective is to develop a system that would facilitate the interaction of researchers, health care givers and the community at large in managing health research.

Element III: Priority Setting

ENHR implies a new approach for setting research priorities. Noting the terminal goal of increasing health and development equitably, the criteria for selecting priorities must be heavily weighted in favor of the poor, under-served and disadvantaged sections of the population. Objective analysis of data obtained from country-specific research studies would provide a rational basis for identifying priorities for both action and research, including global research. The research agenda and an inventory of existing institutions and scientists would indicate the need for institution building, training of research personnel and other measures for strengthening national research capabilities.

Element IV: Capacity Building & Strengthening

Developing countries need to strengthen their capability to conduct research on issues of relevance to their national health programs. High priority must be given to developing the capacity to carry out country-specific research. They should also steadily increase the capability to contribute to global research, especially on problems that are of high priority in their geographical area.

Element V: Networking

Working in isolation often limits the effectiveness of scientists in developing countries. As part of ENHR it is important to establish and strengthen networks among researchers from various disciplines at the national level and also promote interaction with their peers in other parts of the world.

Element VI: Financing

The objective of this element is to increase financial support for research activities and for capacity building and strengthening, and to ensure that all resources are applied effectively.

Element VII: Evaluation

A monitoring and evaluation process must be included in every aspect of the ENHR program. This would ensure that efforts have maximal impact, and it would indicate the need for mid-course corrections.

The implementation challenge: an agenda for action

During the first international workshop on ENHR, in Pattaya, Thailand (November 1990), participants identified seven elements for implementing ENHR. The seven elements represent a check-list of activities that need to be considered in the development of ENHR. The ordered list does not imply a linear progression from one item to the next; rather, individual countries can use the analysis contained in the description of these elements as guidelines for developing and operating their national programs. The seven elements (see Box 1.5) are described in detail in the next chapter. Briefly, they are:

Element I: Promotion & Advocacy

Element II: ENHR Mechanism

Element III: Priority Setting

Element IV: Capacity Building & Strengthening

Element V: Networking

Element VI: Financing

Element VII: Evaluation

Conclusions and Summary

The ultimate goal of all development and health programs is to improve human welfare. The Commission on Health Research for Development identified "Essential National Health Research" as a powerful tool in the global effort to promote health and development on a basis of equity and social justice.

Governments in developing countries and international development agencies should recognize the contributions that ENHR can make to the promotion of health and development, especially the health of disadvantaged groups. It would link research, policy and action — the ENHR loop that would promote the establishment of rational policies, and the effective management of health programs. ENHR would enhance the ability of countries to address health problems using means that are realistic, effective and within their financial reach. All partners in health share the responsibility of defining the most important health problems in their country. Political will — national and international — is needed to build the research capacity of developing countries, and to maximize the contribution of health research to the promotion of health, equity and development.

Notes

1. See Appendix I for a list of Commission members and sponsors.
2. Throughout this book, all unidentified quotations come from the Commission's report, **Health Research: Essential Link to Equity in Development**, New York: Oxford University Press, 1990.
3. The text of World Health Assembly Resolution 43.13 appears in Appendix II.
4. Throughout, "ENHR" used as short-hand form to designate the *strategy* defined by these goals, contents, and mode of operation.
5. "Primary health care is essential health care based on practical, **scientifically sound**, and socially acceptable methods and technology..." — Alma Ata Declaration.
6. Throughout this book, "partners in health" will be used as short-hand for the wide range of individuals and groups concerned with health and development.

Chapter Two: Implementing ENHR — the Seven Elements

As noted in the Preface, the following descriptions rely on a combination of theoretical explanation and concrete examples drawn from the ENHR-related experiences of six countries. These examples are by no means an exhaustive record of achievements to date, but should serve to clarify many of the key issues of concern for each element. It must be stressed, once again, that these elements do not represent a linear progression; rather, several of them must frequently be undertaken simultaneously, and all of them require on-going attention, in response to changes in national needs or in any of the other elements, even after the ENHR program has been institutionalized within a given country.

Element One: ENHR Promotion

"Research on health in developing countries suffers [under] serious constraints, including limited opportunities for career advancement and professional development, weak and unstable institutional environments, and insufficient and erratic funding. The lack of appreciation of the importance of research has resulted in low social esteem and poor salary structures for scientists."

The problem

- What should be done to promote health research in each developing country?
- How can the relevant groups be recruited to support ENHR, and how can effective communications be established and maintained among them?
- How can the links between research and action be strengthened?

The Commission noted a wide range in the levels of research development achieved in developing countries. In spite of these differences, three major constraints existed in most countries. There was limited demand and allocation of resources for research; research was not always focused on priority problems; and research results were not used in policy and action.

The goal

The goal of ENHR promotion is to initiate and sustain effective consultations among various partners in health (researchers, policy makers, health care providers and the public at large), to overcome the isolation and fragmentation of research efforts, and to establish and strengthen close links between research, policy and action.

The challenge

The first challenge is to involve all health partners in the planning, implementation and evaluation of research and to promote the use of research findings in guiding policy and action. This, in turn, requires effective leadership to initiate and sustain an on-going ENHR process. An additional challenge is to modify and adapt the generic process described here in order to meet the needs of each country — whether it has so far established little health research infrastructure and few effective mechanisms or has well-established research programs and needs only to identify gaps to be filled and weak links to be strengthened.

Prime movers

The ENHR movement requires strong leadership. Such leaders can belong to any group, but they must be credible, well accepted, committed to supporting ENHR, and willing to devote a lot of time and attention to the movement. Prime movers must be able to establish a broad national coalition and ensure high-level political support.

National coalition

Prime movers have to appeal to a broad range of organizations and groups as well as individuals. A national coalition in support of ENHR might thus include, but not be limited to:

- national research councils for health and for other sectors;
- research institutes;
- ministry of health: epidemiology, planning unit, etc.;

- universities: faculties of medicine, of other health sciences, of social and behavioral sciences, etc.;
- non-governmental organizations (NGOs), both national and international;
- community leaders (women's groups, teachers' associations, religious groups, etc.);
- traditional healers;
- bilateral and multi-lateral donor agencies and multi-lateral organizations;
- foundations, local and foreign.

Launching ENHR

The objective of launching ENHR is to build a consensus among a broad constituency of partners in health and to define an agenda for action. The most appropriate approach for launching the ENHR initiative is best determined by each country, taking into consideration local circumstances.

ENHR has been launched by a national workshop in several countries (see box 2.1). A major event for the launching of ENHR can be a valuable way of raising interest in and awareness of health research, giving it a high profile, and recruiting a broad constituency in support of it. Even in countries in which research councils are well established, such an event might prove a useful way of broadening the range of participants in ENHR. In some countries, however, a formal launching may not be needed or desirable.

Activities

The launching of ENHR should result from a process that includes:

a. preliminary consultations and workshops to sensitize the various relevant groups, including a high-level political constituency; and

b. review and synthesis of background documents containing data on the country's health problems. These might include a country profile of socio-economic and health indicators; an epidemiological assessment of major health problems and projection of future trends; a review of the health care system; and assessments of research capacity, of information systems, and of past and present health research.

Continuing advocacy

Whether or not there is a formal launching, continuing advocacy is needed to sensitize:

- health care givers to the value of research in guiding what they do;
- researchers to the necessity of focusing ENHR on high-priority issues;

BOX 2.1

National ENHR workshop

National ENHR efforts have in many cases been officially launched through a national ENHR workshop. To ensure high-level endorsement, workshop participants should include the Minister of Health and senior government officials, deans of medical schools and other relevant university faculties, representatives of international programs and agencies, philanthropic foundations and others. In addition, resource persons such as former members of the Commission on Health Research for Development, members of the Task Force on Health Research for Development, or others involved in the global ENHR movement can be excellent catalysts and facilitators of the interaction among different groups and interests within the country.

Workshop agenda

At plenary sessions during the workshop, presentations of the ENHR concept and analysis of the health situation should convey the information participants need to:

- review the state of health research;
- examine difficulties encountered, past errors, lessons learned;
- define strategies to strengthen research capacity; and
- determine health problems requiring further research.

Smaller working groups may discuss specific problems in depth and make recommendations, for instance, on:

- priorities for health research;
- mechanisms to strengthen ENHR; and
- capacity-building needs.

Participants might review working-group recommendations during a final plenary session, and draw up plans and a time-line for future action.

The launching workshop lays a foundation on which to build continuing promotional efforts and on-going sensitization to the need for ENHR.

- policy makers, health care providers, and the public at large to the importance of health research in informing them and improving the quality of care.

Follow-up events should concentrate on:

- promoting the idea of a health system based on objective scientific knowledge;
- increasing demand for and use of research results; and
- strengthening problem-driven and action-oriented research, with the objectives of reaching out to the many partners in health and establishing a dialogue among them at various levels of the health system and in all parts of the country.

Focus on specific problem areas

Activities in the on-going promotion of ENHR would focus on specific health issues, on particular geographical areas, or on particular population groups defined by age, sex, or risk factors. Such events should include representatives of all groups with an interest in the specific issue under discussion. On each occasion, all relevant groups should participate in the formulation of key questions, and agree on further research needs. For instance, groups assessing:

- *Women's health* — might include health care providers (obstetricians, gynecologists, midwives, other health workers); decision makers working in maternal and child health services; researchers working on women's and reproductive health; women's organizations; and other professional groups (e.g., lawyers who focus on women's rights);

- *Adolescent health* — might include parent-teacher associations, health education and social researchers, physicians and other health care providers, adolescents, representatives from the ministry of education;

- *Occupational health hazards* — might include engineers, environmental protection agencies, workers' unions, epidemiologists, physicians, etc.

National ENHR mechanism

The promotion of ENHR should lead to the establishment of a national mechanism for research promotion and coordination.

Experiences to date

Several countries have launched activities to promote ENHR, and several international programs and agencies, academic institutions, and philanthropic organizations have reviewed their programs in the light of ENHR.

In some developing countries, promotional efforts were initiated by means of country workshops held between June 1989 and January 1990, most of them in home countries of the Commissioners — Bangladesh (June 1989); Zimbabwe (August 1989); Brazil (October 1989); Egypt (December 1989); and Mexico (January 1990). The purpose of these workshops was to test the ideas of the Commission and discuss the Commission's recommendations.

The formal presentation of the Commission's report at the Karolinska Institute Nobel Conference on Health Research for Development in February 1990 launched the international promotional effort, strengthened already-established national ENHR efforts, and sparked new country initiatives to promote ENHR.

In this and later sections of this chapter, examples of ENHR activities will be drawn from the experiences of selected countries in Asia (Thailand and the Philippines), Africa (Mozambique and Zimbabwe), and Latin America (Brazil and Mexico). These countries represent a sample of the wide variety of health research development going on in developing countries, whose infrastructures range from very limited health research capacity to elaborate human and institutional capabilities. An overview of key development indicators for each country is presented in the table in box 2.2.

Mozambique

The promotion of ENHR found fertile ground immediately in Mozambique and began shortly after the regional ENHR workshop in Harare, Zimbabwe (August 1989). At the workshop, Dr. J. Cabral, National Director of Health, spoke eloquently of the need to increase research capacity in Mozambique in order to broaden the available information base as well as to allow for participation in global research efforts. The Ministry of Health, he pointed out, needed more information on the health situation of the country in order to formulate a new strategy for Health for All, and in order to make difficult decisions about priorities in the context of harsh economic constraints.

In this instance, the promotion of ENHR corresponded to felt needs in the country, and no formal launching was needed to initiate national ENHR

BOX 2.2

Basic indicators in the six sample countries

Country	GNP/capita*	Population (millions)**	Life expectancy***
Mozambique	80	15.3	49
Zimbabwe	650	9.5	64
Philippines	710	60.0	64
Thailand	1220	55.4	66
Mexico	2010	84.6	69
Brazil	2540	147.3	66

* in U.S. dollars (1989)
** mid-1989
*** at birth (1989)

source: World Development Report 1991, The World Bank

efforts. Close working relationships have existed for several years among the three institutions most active in health research — the medical school of the University in Maputo, the National Institute of Health (INS), and the Regional Center for Health Development (CRDS) — and between these institutions and the Ministry of Health. An inter-institutional board, including representatives of the three research institutions, was created to develop an ENHR plan for institutional and human capacity building, and to coordinate health research in Mozambique.

Zimbabwe

Professor W. Kamba, Vice-Chancellor of the University of Zimbabwe and former Commissioner, spearheaded the early ENHR promotion in his country on the occasion of the regional workshop held in Harare (August 1989). A year later, in August 1990, Professor Kamba and the Minister of Health, Dr. T. Stamps, attended the official launching of ENHR in Zimbabwe, held in conjunction with the formal presentation of the Commission's report. The opening ceremony was shown on national television, and highlighted the MOH's support for ENHR activities. The event also marked the inauguration of the Zimbabwe Committee on ENHR, which is continuing the advocacy and promotion of ENHR in the country.

Thailand

Prior to the Commission's involvement, the National Epidemiology Board of Thailand (NEBT) had already established linkages between research and policy, and developed problem-driven, multidisciplinary and intersectoral research. The NEBT represented one of the first efforts to identify critical information and research that might have policy implications, and has continually re-examined the linkage of research to policy and tried to find ways of strengthening it. The Board endorsed ENHR in 1990 as a means of making further progress. Having adopted the ENHR strategy, the NEBT will now try to expand participation beyond its present membership, and to reduce conflict or inappropriate competition among health research institutions in the country. First established to promote epidemiological research, the NEBT has gradually broadened the scope of its activities. In addition, it hosted the first international ENHR workshop in Pattaya, in November 1990.

The Philippines

When the call for ENHR was formally made at the 15th Nobel Conference in Stockholm in February 1990, the Department of Health (DOH) of the Philippines, through the Secretary of Health, Dr. Alfredo R. A. Bengzon, made a public commitment to promote ENHR. A DOH ad-hoc committee was then created in mid-1990 to lay out initial plans for defining a national research agenda. The committee organized a workshop in June 1990 to introduce the concept of ENHR and discuss its promotion with key officials of the DOH as well as health professionals from academia and the private sector. All participants expressed support for ENHR. Drawing from the proceedings of the workshop, the DOH pre-

pared a document describing a conceptual framework for ENHR in the country, which was the basis for country presentation at the first international ENHR workshop in Thailand, in November 1990. A national conference will be organized in 1992 to define a mechanism for coordinating ENHR activities, determining research priorities, setting out a research agenda, and fleshing out the operational plan. (See box 2.3.)

Brazil

Because the Oswaldo Cruz Foundation (FIOCRUZ) had a long-standing tradition in health research in Brazil, the institution was chosen to host the first national workshop promoted by the Commission in October 1989 (see box 2.4). This meeting introduced the discussion of local conditions in Brazil for the development of a health research system oriented toward national development, and of the necessary strategy and steps for its implementation.

The Foundation has assumed leadership in the promotion of ENHR in the country, and is playing a strategic role in stimulating stronger links between the biomedical and other health and scientific communities. In addition to Oswaldo Cruz's tradition of scientific and technological leadership at national level, the Brazilian ENHR movement requires the establishment of new relationships between the scientific community and the health system. These relationships should be based on adequate scientific and technological transfer of research and development results to health policy. At this moment some important issues need to be stressed:

1. In addition to FIOCRUZ's long-standing tradition of scientific and technological leadership at national level, the foundation requires a new relationship with the health system which can guarantee adequate scientific and technological transfer of its research and development results to health policy.
2. ENHR should be understood not only as knowledge generation, but as a major tool for improving the quality of health policies and the health delivery system in the country, supporting the decision-making process at all levels of management.

BOX 2.3

Health Research in the Philippines

The Secretary of Health of the Philippines once diagnosed the health research situation in his country as being "in an epileptic state — uncoordinated, chaotic, non-purposive and exhausting." He noted that at least 56 public and private institutions, comprising close to one thousand highly trained scientists, were currently engaged in health research. Between 1980 and 1990, 894 research projects were undertaken by various health researchers. These include only those supported by the Philippine Council for Health Research and Development (PCHRD) and in-house studies conducted in large government hospitals and research institutions in Metro Manila. However, these studies comprise a small subset of the universe of national research efforts.

Research conducted by the Department of Health (DOH) was mostly of clinical or epidemiological nature (75 percent). There were very few studies in the fields of operations (15 percent) or impact assessment (5 percent), and none on health care financing.

Both public and private sectors spent large amounts of money on numerous research projects, but the findings were seldom published or drawn on for policy making or health operations. There was clearly a need for a well-thought-out research policy and an agenda for setting priorities, coordinating efforts, and using research output. All of these functions are the core of ENHR.

At the Nobel Conference in Stockholm in February 1990, the Secretary of Health made a public commitment to promote and undertake ENHR in the Philippines. The Health Secretary envisioned ENHR as a powerful tool for improving health policy and delivery of health services. On his return, he formed an Ad-Hoc Committee to plan the implementation of ENHR in the DOH. A workshop was held in June 1990 to introduce the concept of ENHR to key officials of the DOH, health professionals from academia, and the private sector.

The commitment to ENHR in the Philippines is a recognition of the need for a directed and organized application of the scientific process in dealing with the country's health problems and in strengthening health action by all sectors, including the people. The creation of a health research culture and consciousness, and a comprehensive but realistic research agenda, constitute the keys to the success of ENHR.

3. FIOCRUZ should play a key role in the definition of governmental priorities as these shift toward integrated and goal-oriented health research programs, rather than merely maintaining its traditional support to individual projects.

4. National and regional networks oriented to country-specific problems must be developed. (The National Multicentrical Network for Health Policy Research, coordinated by the National School of Public Health (ENSP) and FIOCRUZ and involving seven Brazilian states, is a good example, in spite of its present funding difficulties.)

5. Links between existing national health research and policy making must be improved.

BOX 2.4

FIOCRUZ

The Oswaldo Cruz Foundation (FIOCRUZ), the center of the Brazilian ENHR movement, has a long tradition in biomedical and public health research activities in Brazil. It was created in 1900, in the old farm named Manguinhos, in the city of Rio de Janeiro, as a Federal Serotherapic Institute with responsibility for production of vaccines and sera for the control of the two main epidemics that were devastating the country at that time: yellow fever and bubonic plague.

FIOCRUZ was created to deal with major public health problems, and its institutional structure and operations were designed to suit this purpose. As a consequence, the institution became a key scientific and technological resource for the programs and activities of the Brazilian Ministry of Health.

In 1903, Oswaldo Cruz, then an unknown medical microbiologist who had been trained at the Pasteur Institute in Paris, was designated Director of National Service of Public Health in Rio de Janeiro. Taking the Federal Serotherapic Institute as his main scientific and technical support, he started his remarkable national sanitary campaigns. The strong links he established between the Public Health National Service and the Institute, as director of both institutions, contributed to the success of his sanitary campaigns and, as a consequence, to the further development of the Institute. Links between research and health policy were clearly expressed in Oswaldo Cruz's Sanitary Reform Project. A similar linkage would be repeated by Carlos Chagas, who discovered the parasite, the transmitter, and the disease that now bears his name.

During this century, the Oswaldo Cruz Institute has been transformed into a modern institutional complex with intense interaction among those engaged in the diverse activities of the health-related fields: teaching; research; and development, production, and quality control of health products and health services.

Mexico

In Mexico, leadership for the promotion of ENHR was assumed by Dr. A. Martinez-Palomo, President of the Mexican Academy of Science and a former Commissioner. A country workshop was held in Puebla (January 1990) to discuss the recommendations of the Commission, and several amendments were suggested by Mexican scientists. The recommendations were later reviewed in three workshops at the National College, the National Autonomous University and the National Public Health Institute.

After the publication of the Commission's report, further discussions with Dr. J. Kumate, the current Mexican Secretary of Health, and other experts led to the formation of the National Commission on Health Research (COMISA). The main aim of the COMISA is the promotion of health research for development with an interdisciplinary approach, using appropriate strategies to combine the expertise existing at different levels of the health system.

Element Two: National ENHR Mechanism

"The linkage between research and the utilization of research results needs to be strengthened [through greater] participation of research users in setting the objectives and timetable for research projects, and [through more effective communication of results] to potential users."

The problem

- Where should the ENHR program be centered?
- What functions should an ENHR coordinating body perform?
- How can maximal intersectoral and multidisciplinary interaction and coordination be ensured?

Many developing countries already have structures to promote and coordinate health-related research; these include:

- medical research councils;
- academies of sciences;
- university research committees;
- ministries or commissions on science and technology;
- health commissions in the parliament;
- ministries of social welfare/security;
- ministries of health - research, planning, and development departments.

Each of these organizations carries out a number of important functions relevant to health, but there are gaps between what they do and what needs to be done. Existing structures often integrate research efforts within individual disciplines, but lack a mechanism to facilitate broader multidisciplinary and intersectoral integration of research efforts. Different coordinating bodies usually oversee the research activities of governmental sectors and of universities. Because of these structural divisions, research effort is usually fragmented, and academic research resources are not effectively mobilized to address the most important health issues of the country.

Often various councils, committees, and commissions oversee health research, but there is no mechanism for linking research activities with policy decisions and action programs. Health care providers, policy makers, and the public at large usually do not participate in the formulation of research questions and are rarely informed about research results. Researchers publish their findings in scientific journals that are usually not easily accessible to ministries, nor are the results presented in a form which can easily be translated into policy and action. Health research, therefore, often does not contribute as fully as it might to guiding health policy and improving the quality of care. A national ENHR mechanism should fill these gaps.

The goal

The goal of a national ENHR mechanism is to create a national health research system that coordinates all relevant research efforts required to address health problems — in biomedical and clinical sciences, in public health and social science disciplines, in the basic sciences and other fields of research related to health — and that closely links research to policy and action.

The challenge

The ENHR strategy demands the participation of many actors. Researchers and decision-makers — who include policy makers, health care providers and the public at large — must work together to define research needs and to implement research results. The challenge, therefore, is to define the best mechanism and structure for:

- ensuring that high-priority health issues receive the attention of researchers;
- facilitating the integration of research across disciplines and sectors; and
- strengthening research–policy–action linkages.

Functions of ENHR mechanisms

Regardless of its exact structure, the ENHR mechanism should fulfill certain functions, which include:

- providing leadership and continuing promotion for health research;
- defining the contents of ENHR within the national context, based on the views of a broad-based constituency;
- identifying priorities for research and capacity-strengthening;
- coordinating the planning process;
- stimulating demand for and use of research results;
- providing technical support for ENHR (including helping in the development of research plans and grant proposals);
- planning for and promoting the improvement of capacity to conduct research, including training, personnel development, and strengthening of institutions;
- mobilizing resources for research (in part by acting as a clearinghouse for information, especially about sources of funding);
- sustaining on-going and dynamic interaction among policy makers, researchers, health care providers and the public at large; and
- monitoring and evaluating ENHR efforts, including development of a good mechanism for

peer review, and, where indicated, for external evaluations.

Credibility and long-term sustainability of the ENHR mechanism are crucial for the success of ENHR. The best structure to host ENHR should, therefore, be chosen carefully to ensure stability of the ENHR movement, while retaining its own flexibility.

Structure of the ENHR mechanism

Many countries have enthusiastically accepted the concept of ENHR, and are in the process of developing national mechanisms. In some cases, the authorities are reviewing existing mechanisms for research promotion and coordination to determine the best way to develop them to serve ENHR. A delicate balance has to be maintained between the advantages offered by governmental bodies and the benefits of non-governmental or academic institutions. Governmental structures can be powerful mechanisms which work closely with government health services in the provision of care. They may, however, not survive changes in government; they often suffer from bureaucratic rigidity; and they are not always representative of all the appropriate groups in the country. On the other hand, academic or non-governmental organizations may have stability and autonomy, but, with a few exceptions, have little power. Countries should therefore attempt to reorient or reform existing structures, but if necessary they should create a new structure that can coordinate the efforts of those that already exist.

Experiences to date

Advocacy and promotional activities have resulted in the establishment of national ENHR mechanisms in Mozambique, Zimbabwe, Thailand, the Philippines, and Mexico.

With the exception of the NEBT in Thailand, these mechanisms have required the development of new structures, which were created in some instances as governmental structures (e.g., the ENHR Unit in the DOH in the Philippines) and in others as non-governmental bodies (e.g., the ENHR inter-institutional board in Mozambique; the Zimbabwe ENHR Committee; and the Mexican Commission on Health Research [COMISA]). Some national non-governmental ENHR mechanisms are hosted by well-established national research coordinating bodies — in Mexico by the National Academy of Science and in Zimbabwe by the Zimbabwe Research Council.

Some of these efforts began prior to any involvement by the Commission, but the worldwide distribution of the Commission's report and the new growth of a global ENHR movement played a key role in boosting existing national efforts and enhancing their legitimacy. In each instance, the ENHR concept acted as a catalyst for strengthening ongoing efforts, for linking research more closely to policy and action, and for promoting multidisciplinary and intersectoral research. (See box 2.5.)

Mozambique

The ENHR mechanism was established in Mozambique as an inter-institutional board. The board includes members from the three major research institutions — the medical school, the National Institute of Health (INS), and the Regional Center for Health Development (CRDS). No other research coordinating mechanism exists in the country.

The most important priorities identified in Mozambique were the need to train a critical mass of researchers to identify and address health problems, and the need to improve the infrastructure for research. Members of the inter-institutional board jointly designed a 10-year program to strengthen the human and institutional research capacity in Mozambique.

Zimbabwe

The Zimbabwe Committee on ENHR was established in August 1990 as a sub-committee of the Zimbabwe Research Council, but it functions as an independent body for operational purposes. The Committee includes 16 members representing a broad range of institutions — Ministries of Health and of Finance and Economic Planning; the University of Zimbabwe (departments of sociology, economics and community medicine); the Blair Research Institute; the medical school; the Medical Research Council and the Zimbabwe Research Council; provincial medical directors; and city medical officers.

The committee resolved to embark on a number of activities immediately, building on programs initiated by the MRCZ. These activities should be completed within a year and include:

1. documenting research;
2. prioritizing and initiating coordinated research efforts;
3. undertaking in-depth analyses of data collected by the Health Information System in the Ministry of Health.

The documentation of research and data analysis are needed in order to define an agenda to guide health research in the country.

BOX 2.5

National ENHR mechanisms

	Name	Organization	Hosted by
Mozambique	ENHR Committee	Inter-institutional research coordinating board	
Zimbabwe	ENHR Committee	Non-governmental, inter-institutional board	Zimbabwe Research Council
Thailand	National Epidemiology Board (NEBT)	Established by MOPH	
Philippines	ENHR Unit	Established in DOH	
Mexico	MexicanCommission on Health Research (COMISA)	Non-governmental organization	Mexican National Academy of Medicine
Brazil	FIOCRUZ*		

* FIOCRUZ has taken on a leadership role for promoting ENHR, but a national ENHR mechanism has yet to be established in Brazil.

Thailand

The National Epidemiology Board of Thailand (NEBT) has endorsed the ENHR concept as a means of moving forward, but no structural changes have been made. The NEBT was established by the Ministry of Public Health (MOPH) and works closely with it, but the Board has the freedom and flexibility it requires for effective operation. The objectives of the NEBT were already very close to the objectives of ENHR: The mission of the NEBT is to mobilize resources to generate relevant essential knowledge to be used in policy formulation and in the planning, evaluation, and implementation of health services.

The NEBT has undergone various phases of restructuring in response to new situations, and demonstrates the necessary flexibility of an ENHR mechanism. Initially, policy guidance was provided by a National Epidemiology Board made up of administrators who were perceived as experts in health development. The Technical Management Committee provided technical direction, and the Office of the NEBT provided secretarial assistance with a minimal staff. In 1989, the Joint Secretariat was added to strengthen the Office of the NEBT and to deal with "hot" issues, as these were defined by the government and/or the public. The present organizational structure of the NEBT was adopted in 1990. A Board of Trustees, consisting of members of the previous Board as well as former officials of some donor agencies, was appointed to provide policy guidance. The Board has evolved out of the original Technical Management Committee; its job is to analyze the plan proposed by the Executive Committee and monitor the work of the entire NEBT. The Executive Committee prepares a plan by interacting with technical commissions and other ad-hoc technical committees and expert groups. It also executes certain aspects of the plans. The technical programs and commissions cover aspects of communicable diseases, non-communicable diseases, environmental health, and health systems research. Special programs deal with concerns of policy makers and the public. (See box 2.6.)

The NEBT has linkages with other sectors of the government, often in the form of the same workers serving on various committees. Clear objectives for these linkages have yet to be developed.

The Philippines

A unit for ENHR was created in the Department of Health (DOH) in the Philippines. This unit will strengthen collaboration between the DOH and various other institutions through the ENHR Advisory Board.

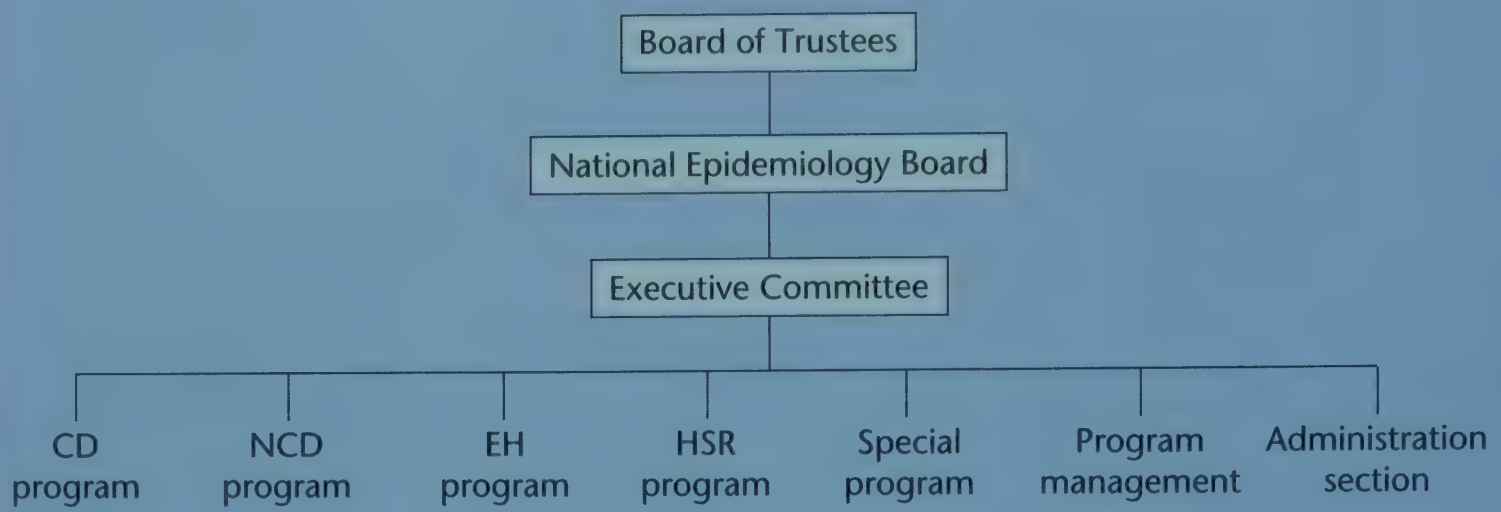
COMMUNITY HEALTH CELL
326, V Main, I Block
Koramangala
Bangalore-560034
India

C2020
COMH 300
21 IN91

BOX 2.6

Structure of the NEBT

There are three main bodies in the NEBT. The National Epidemiology Board (NEB) is the policy-making body guided by the Board of Trustees. The Executive Committee of the NEBT is responsible for implementing the plans approved by the NEB. It is chaired by the President (who is also the executive secretary of the NEB) and made up of the heads of the various program areas.



CD = communicable diseases
NCD = non-communicable diseases
EH = environmental health
HSR = health systems research

The unit has developed a program to direct, coordinate, support, and sustain health research activities in the research institutions and among the numerous researchers in the country. The program aims to create and sustain an environment that is conducive to research and a scientific culture within the health sector, in order to generate critical input for improving both problem definition in policy formulation and operational efficiency and effectiveness in the health sector — and to do all of this within the limited resources available. (See box 2.7.)

Mexico

The Mexican Commission on Health Research (COMISA) was established as a non-governmental organization, but in close collaboration with the Minister of Health. While the COMISA is an independent organization it maintains permanent links with the public sector in order to receive proper input on health care problems. It will be hosted by the Mexican National Academy of Medicine.

COMISA's general objective is to encourage the development of research in scientific and technical disciplines that can contribute to the improvement of health in Mexico. The first goal is to present, within the next six months, a comprehensive proposal for ENHR to the Task Force on Health Research for Development. (See box 2.8.)

BOX 2.7

ENHR office in the DOH of the Philippines

Objectives

- reinforce research consciousness among policy makers, health care providers, and other health professionals;
- define priority issues which research can address;
- establish and operate a mechanism which generates a dynamic research agenda responsive to the health needs of the Filipino people;
- develop technical and managerial competence for research to pursue such an agenda;
- strengthen the capacity of local institutions to enhance and sustain productivity of researchers and research managers;
- generate nationally relevant research;
- ensure that research results lead to improved policy formulation and effective operations; and
- maximize the impact of research in improved health sector operations and community actions.

BOX 2.8

Mexican Commission on Health Research

General objective

To encourage the development of research in scientific and technical disciplines that can contribute to the improvement of health in Mexico.

Specific objectives

- analyze the "state of the art" of scientific and technological research in health, identifying, given the needs and resources of Mexico, the most developed areas, those requiring major efforts, and others that should be addressed in the near future;
- plan a program of scientific and technological research that takes into account the needs and resources of Mexico;
- identify, diversify, promote, and expand national and international mechanisms for the financing of health research;
- facilitate scientific projects which are interdisciplinary, interinstitutional, and international;
- promote permanent study of the short- and long-term future of health and health research; and
- encourage stronger links between research scientists and health policy decision makers.

Element Three: Setting Priorities for the ENHR Action Plan

"We recommend that each country develop a strong plan to conduct research on both country-specific and global health problems — a plan that is feasible, economical, and coherent and that involves all relevant groups."

The problem

- Who should set priorities for health research in developing countries?
- What criteria should they use in assigning priorities?
- To what extent should health care givers, policy makers, researchers and the public at large be involved in the process?

Most developing countries have established mechanisms for identifying research priorities at the national level and also within academic and research institutions. Medical research councils and similar bodies usually perform this function for the health sector. National research councils, national councils of science and technology, ministries of science and technology and similar umbrella organizations attempt to coordinate research on an intersectoral basis.

The Commission found that, in practice, these mechanisms often fail to focus attention on the key issues affecting the health of the majority of the population, especially the needs of the most vulnerable and the disadvantaged. The priorities enunciated by these bodies tend to be narrowly constructed along disciplinary lines and are predominantly oriented toward medical technology. Often, there is no more than token representation of social and behavioral scientists on these priority-setting bodies; and little attention is given to the potential contributions to health from research in other sectors. Each interested group — researchers, health policy makers, health care providers, and the population at large — has a different perspective on the issues that need the most urgent attention, but the current mechanisms do not effectively reconcile these differing views to achieve a consensus on goals and strategies for health research:

- Researchers tend to focus on their disciplinary interests and, wishing to keep up with what their peers are doing elsewhere, they often base their choices of research subjects on research trends in developed countries rather than on issues of local importance. Scientists in academic institutions may not be attracted to research on urgent practical problems. Often dependent on grants from foreign sources, scientists in developing countries frequently have to attend to priorities that are set outside their own countries, and to undertake research that is donor-driven rather than problem-oriented.

- Health care givers face practical problems, some of which demand urgent solutions. They need to know about patterns and determinants of disease, how to apply existing technologies, and how to assess the impact of health care strategies. Because they do not have easy access to scientific literature, they are often unaware of the range of technologies available and of the opportunities for adapting them to suit local needs.

- People in general often have little information on which to base sound judgments, and are often swayed by sensationalized and alarmist reports in the media. They tend to be dominated by a vociferous, elite minority, which ignores the needs of the poor, illiterate, women, children, and other disenfranchised groups.

The goal

The goal is to develop mechanisms and criteria for identifying priorities for health research that would meet the broad objective of ENHR — to achieve equity in health and development. All partners in health (researchers, health care givers, policy makers, and the public at large) must participate in defining priorities for health research. A consensus about the objectives of health research would help to reconcile the perspectives of the various groups involved in setting priorities. (See box 2.9.)

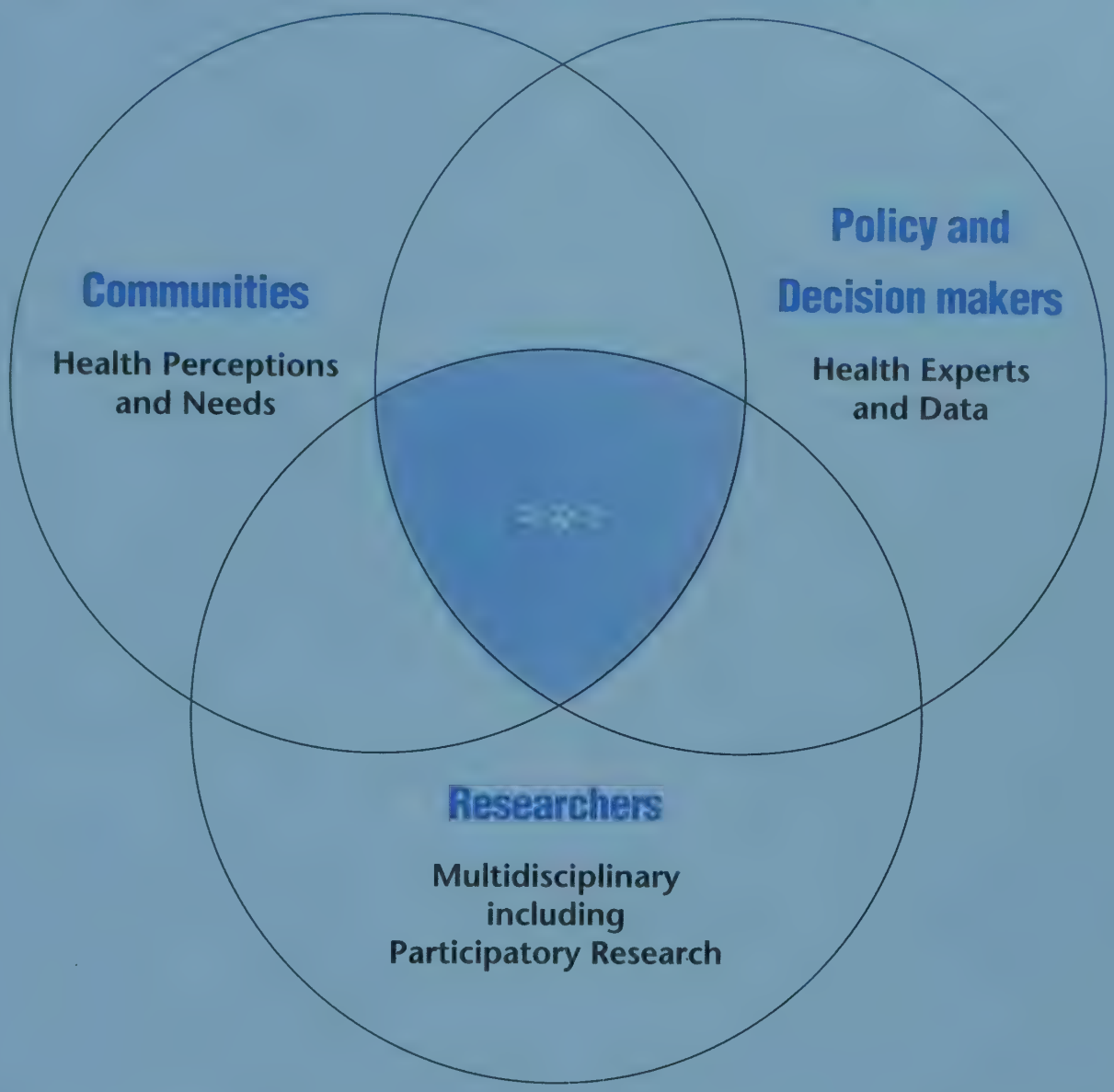
The challenge

The challenge is to capitalize on earlier promotional efforts and on an effective ENHR mechanism in order to achieve a consensus among all relevant groups about ENHR goals and to develop criteria for priority setting. Ideally, the priority-setting process should be an open and inclusive one, in which ideas from all sectors are welcomed; it should thus create useful guidelines without stifling initiative.

At the outset, the process leading to consensus building among producers of research and users of research results is more important than the specific

BOX 2.9

Essential National Health Research Participants



*** In the intersection of all three groups' interests, countries can create effective and sustainable systems of community health and improve the quality of life.

list of priorities. The research tasks will evolve continuously as changes occur in economic, social, demographic and environmental conditions. Therefore, managing this process will be the major challenge for the national ENHR mechanism. The process should lead to the formulation of a national plan for health research, including priorities for research activities and for research capacity strengthening. The plan will draw attention to major problems that need urgent attention. It will guide funding agencies, both private and public, national and external. In fact, a national health research agenda is a critical means of empowering developing countries to channel external as well as internal funding to support priority areas of research, and to define the need for technical assistance.

Guidelines for priority setting on research topics

Priority setting should be systematic and use quantitative as well as qualitative criteria. Epidemiological data will provide information about the public health importance of various diseases and problems by showing the frequency of their occurrence and the severity of their impact on various segments of the population. In addition to clinical measures of impact on mortality and morbidity, the cost of the disease must be considered — both the economic and the social costs to communities, individuals and families. The community's perception of the importance of various problems must also be taken into account in determining the priority of a disease or problem.

The current knowledge about the amenability of given conditions to interventions also comes into

play in priority setting. The diseases and conditions that are not easily amenable to successful intervention deserve the highest priority for research. If technology is the limiting factor, then the research emphasis should be on improving efficacy. When the limitation is related to management and health-care delivery, the emphasis should be on research aimed at increasing effectiveness and efficiency of operations.

Since it should be derived through consultations with a wide spectrum of experts in various disciplines, the national research agenda should include a broad range of complementary approaches. For example, in order to tackle the problem of infant diarrhea, an ENHR plan might include research on the microbiology of pathological agents; the pattern of breast feeding and the use of infant formulas; preparation of traditional weaning foods; sources, adequacy and purity of water supplies; risk factors leading to the occurrence of, and death due to, diarrhea; factors influencing the use of oral rehydration treatment; clinical studies on the management of severe cases; evaluation of new therapeutic agents; development of simple diagnostic tests (e.g., DNA probes) for identifying causal agents; and laboratory-based studies on the immunology of diarrhea-causing infective agents and possible approaches to vaccine development. (See box 2.10.)

Priority setting should not be confined to current problems but should also, pro-actively, include a projection of future trends, especially as they relate to the health transition from a high incidence of infectious diseases to the greater prevalence of chronic and degenerative diseases, cancer, and substance abuse.

Priorities for capacity building will be addressed in Element Four: Strengthening Research Capacity.

Experiences to date

In Mozambique and the Philippines, the national ENHR mechanisms have already completed an initial ENHR plan which clearly outlines priority areas for national ENHR development. In both instances

BOX 2.10

Approaches to controlling diarrheal disease in the Philippines

In 1980, the Philippines became one of the first countries to launch a national diarrheal disease control program. The program integrated the results of concerted local efforts in both country-specific and global research.

The earliest clinical trials on the safety and efficacy of oral rehydration salt (ORS) solutions were conducted in the Philippines more than two decades ago. Subsequent field studies in the mid-1970s which showed the positive effect of oral rehydration therapy (ORT) on diarrhea, provided important input into the program. Soon after these studies, the MOH began the production of ORS packets, which were distributed free of charge through the existing health care delivery system.

Early on, epidemiological studies had been undertaken to determine morbidity patterns, etiologic agents, and risk factors of childhood diarrhea in the country. Morbidity and mortality surveys revealed wide variations across provinces and regions, and provided guidance for program managers in formulating directional plans.

The Philippine Pediatric Society established the medical authority behind the program, and its support was crucial to the acceptance of the program. With the advocacy of pediatricians, general medical practitioners, and other health professionals, laypeople became convinced of the credibility of the concept.

A current project is testing the effectiveness of a communication campaign using mass media and targeting mothers and caretakers in three regions. The campaign is based on commonly held beliefs and attitudes regarding diarrhea and dehydration, health-seeking practices, household management of cases, and determinants of both positive and negative behaviors in the home.

Mindful of the limitations of ORT in CDD, the program has started to give attention to intervention strategies, particularly in the realm of nutrition, that could prevent diarrhea and its effects. Local studies have confirmed the beneficial effects of breastfeeding and improved weaning practices in infant nutrition and diarrhea. Findings of such current and planned studies which test intervention strategies that aim to improve mothers' practices with infants can be used to formulate plans for reducing the morbidity and mortality caused by diarrheal diseases.

BOX 2.11

Priority setting in the National Epidemiology Board of Thailand

When it sets priorities, the NEBT goes through a series of steps from problem identification to knowledge acquisition and application. It employs various mechanisms: it appoints "expert groups" to make recommendations on problems based on available knowledge; it assigns individuals or groups of technical staff to do the state-of-the-art review of the topics; it organizes technical forums to allow experienced persons to provide input; it commissions research teams to work on issues where knowledge is not yet available; and it uses ad-hoc committees. Throughout, quality assurance and application of the knowledge are viewed as essential. The NEBT has established links with some policy makers and administrators in the MOPH. It has met with ministers, the Secretaries of Health, and other authorities in order to foster decision-linked research.

The NEBT identifies priority problems in each program area, initially through the Technical Commissions for each program. Its recommendations are then reviewed by the Executive Committee and the Board. The Executive Committee, in turn, may seek further advice from ad-hoc committees or technical forums prior to the submission of a plan to the Board. The Board makes final decisions on the plan of action.

these plans have been funded and are currently being implemented. In Thailand (box 2.11) and Zimbabwe, national ENHR mechanisms have established collaborative relationships with research coordinating bodies in order to review national research priorities.

In Zimbabwe the Medical Research Council of Zimbabwe (MRCZ) is a non-governmental body created by a 1974 Act of Parliament in order to coordinate and promote all medical and health research in the country. The newly established committee on ENHR and the MRCZ will play important roles in building national consensus on research priorities (see box 2.12). In Brazil, the institutional priorities set by FIOCRUZ will make a major contribution to the ENHR movement.

Mozambique

Mozambique has determined that its highest priority for ENHR is capacity building. The ENHR plan, therefore, has been designed to build a sustainable institutional research capacity by strengthening three key research institutions — the National Institute of Health, the Regional Centre for Health Development, and the medical school — and improving the links between these institutions and the periphery. The plan takes into account the close linkages that have been established between the core institutions and Ministry of Health programs, and aims to provide information for use by MOH policy makers and managers.

The Philippines

In the Philippines, the PCHRD, as part of the Department of Science and Technology, has the legal mandate to provide direction and coordinate health research in the country. In the area of research, the

BOX 2.12

Setting research priorities in Zimbabwe

The newly established committee on ENHR, the Medical Research Council of Zimbabwe, and the Health Systems Research (HSR) unit of the Blair Research Institute will play important roles in building national consensus on research priorities.

The priority-setting process

The HSR unit proposes to undertake a baseline study on research priorities as perceived by a sample of individuals belonging to each of the 43 disciplines registered with the Health Professions Council. The study will also aim to assess research capability in the country, including both individuals and institutions involved in health research.

The HSR unit, however, does not propose to set health research priorities in isolation. It will develop a mechanism to ensure that research priorities are set by a diverse panel of experts with experience in the health field. In setting priorities and in the development of institutional mechanisms to achieve them, it will involve policy and decision makers and senior health managers at central level, provincial and district health teams, and ward and village committees.

BOX 2.13

Priority setting for ENHR in the Philippines

1. Planned activities for ENHR priority setting:
The DOH has organized consultative groups from various disciplines and sectors in order to define research priorities in five areas:
   a. Health sector organization;
   b. Disease control and public health;
   c. Personal health care;
   d. Health care financing; and
   e. Health product development.

2. The process for defining health priorities will be as follows:
   a. Small working groups will prepare state-of-the-art papers on the five areas;
   b. These will be presented in workshops to elicit reactions from different agencies, disciplines and sectors;
   c. Criteria for priority setting will be established through consensus of the various groups represented;
   d. Research priorities will then be determined and packaged as a preliminary proposal;
   e. The preliminary proposal on research priorities will be presented in a National Conference on ENHR for revision and approval. The Conference is scheduled for February 1992.

DOH-ENHR unit will work very closely with PCHRD through the ENHR Advisory Board. The National Health Research and Development Plan, developed through a consultation process with the scientific and academic communities as well as DOH program managers, indicates the blueprint for health research and development in the country. The plan focuses on two primary objectives: generation of new knowledge and utilization of appropriate technologies to solve priority problems; and development of research capabilities needed to fully implement health research programs. Priorities for ENHR will be defined within this broad framework according to criteria developed by consultative groups from various disciplines and sectors (see box 2.13).

Mexico

The COMISA will establish interdisciplinary groups representing biomedicine, clinical sciences, public health, health services, and social sciences.

It will also create a number of ad-hoc working groups which will meet to design an overall proposal for priority health research in Mexico. The proposal will be problem-oriented, and will emphasize those areas where strengths and weaknesses have been identified.

Element Four: Strengthening Research Capacity

"Implementing a national plan to conduct research on both country-specific and global health problems will require building and maintaining research capacity within developing countries, and sustained reinforcement from the international community."

The problem

- What should the priority areas be for strengthening research capacity?
- How can qualified scientists be trained and attracted, and their services retained?
- How can institutions be improved to meet the needs of ENHR?

Many developing countries still lack the capacity to mount the research effort identified by ENHR mechanisms because of defects in their institutions, shortages of trained researchers, limitations of funding, and poor logistic support.

The disciplines and institutional structures critical to country-specific research are weak in most developing countries. Few countries have the critical mass of researchers they need, and important elements are often missing. Research capacity in the fields of epidemiology, demography, and the social and behavioral sciences tends to be weaker than it is in the fields of clinical and biomedical sciences.

The worsening economic situation has constrained capacity-building efforts in many countries, but has been particularly severe in Sub-Saharan Africa, where health problems have been aggravated by economic, environmental, and political difficulties, and where national resources to respond are very limited and are declining. Researchers' salaries are now often below living wages; many researchers work in isolation; there are virtually no career paths; and competition from the opportunities offered by private medical practice and other private sectors is increasing.

The goal

The goal is to ensure that each country develops the research capacity needed to analyze continually its health situation and to identify its major health problems; to respond to new challenges; and to develop better interventions for prevention, control and treatment.

The challenge

The challenge is to attract and retain the very best scientists and to minimize the external and internal brain drain. National commitment is indispensable if the ENHR movement is to secure the necessary resources and to create a positive research environment. Capacity building requires long-term investments in programs, rather than in isolated projects. External agencies can assist more effectively by committing their support for 10-15 years.

National ENHR mechanisms should develop an integrated capacity-building plan for ENHR. The plan should include means to improve the research environment, national information systems and logistical support; to strengthen institutions; and to train researchers, as well as policy makers and health care providers. Capacity-building needs should be driven by, and should sustain, country-specific and global research efforts.

The first priority is to develop the capacity to conduct country-specific research, in order to increase national self-sufficiency in identifying and analyzing health problems, and in responding to emerging needs. In addition to expertise in basic public health disciplines, including the social sciences, training should provide specific technical research skills — e.g., for vector biologists or technicians in diagnostic methodologies in countries where malaria, schistosomiasis, and other parasitic or viral diseases are endemic.

Countries will thus gradually develop the capacity to identify national health problems that warrant a global research effort, and will be prepared to participate more actively in the international research community. Each country should, within the limits of its means, contribute to those global research efforts that are relevant to its particular needs. It is important to continue a steady build-up in the number of such projects as resources increase, and to strengthen the research training in the basic sciences required to conduct global research.

The level of overall development of health research varies among developing countries and determines a nation's need for capacity building, strengthening, or development. In each instance, clear priorities should be established based on locally determined options. Countries with weak research capacity might choose to build capacity and to place the highest priority on the development of human resources; countries with a moderate research capacity need to strengthen it, and should place stronger emphasis on institutional development; and countries that already have a critical mass of trained

researchers should develop capacity by improving logistics and technical support to research operations.

Experiences to date

The need for capacity building, strengthening, or development varies widely across the range of institutional and human resources available for conducting country-specific and global research.

Capacity building is the highest priority in most Sub-Saharan African countries, while several institutions in Latin America and Asia have the capacity to become centers of excellence for public health training that could contribute to regional capacity building and strengthening efforts. Mexico, Brazil, and Thailand, for example, already have strong research institutions and well-trained researchers. They could also participate in multi-centric training and research programs that would strengthen South-South as well North-South collaboration for ENHR.

The commitment of national governments plays an essential role in national capacity-building efforts.

BOX 2.14

ENHR Capacity Building Plan in Mozambique

Mozambique has come up with a 10-year plan comprising three phases:

1. During the first phase (three years), Mozambique will begin forming a nucleus of research training capabilities to be located within the principal research/training institutions. This phase will also permit clarified definition of the country-specific context of ENHR and a plan for developing the necessary research capability.
2. In the second phase (four years), those involved in ENHR will gain experience, through application of the skills and capabilities developed in the first phase. The training process will most likely continue throughout the project.
3. The final phase will be the consolidation phase. Training and experiences gained in the first two phases will be focused on the development of research on key critical issues and the establishment of a core of trainers that can ensure the continued reproduction of ENHR workers.

Mozambique

Although a small core of research capabilities has been built up in the last 15 years in Mozambique, most of the institutions remain weak. While several institutions have some degree of responsibility for conducting research and providing training, much of the work is done by the same few individuals playing a variety of roles. All the relevant institutions — the medical school, the National Institute of Public Health (INS), and the CRDS — must be strengthened in order to generate a critical mass of researchers able to address immediate and long-term health problems in the country. To bridge this gap, the ENHR group developed a long-term national capacity building plan. (See box 2.14.)

The goals of this plan are keyed to an integrated approach to strengthening research capabilities in all three institutions, with effects on one having a carry-over effect on the others. The need to link experienced researchers with those active in the field is fundamental.

To begin to address existing needs, the first phase of the plan calls for people to begin post-graduate training overseas in the following disciplines: epidemiology, tropical and infectious diseases, health economics, sociology, biostatistics, demography, and information sciences.

The strengthening of the INS's documentation center is a central concern of the project. First-phase activities will include such ground-laying work as identifying and acquiring appropriate documents, acquiring data processing equipment, creating a database of Mozambican health sciences literature, improving the technical proficiency of the staff, and disseminating information.

Zimbabwe

Even before the Joint WHO/DGIS/RTI Project for HSR (health systems research) for the Southern African Region, Zimbabwe had developed an early interest in HSR as a means of supporting government health policies for equity in health within the context of primary health care (PHC). Working collaboratively with the international organizations, those involved in health in Zimbabwe aimed to solve management problems associated with the implementation of health care services at all levels, and thereby to make cost-effective and efficient use of limited resources. Training in health systems research has strengthened research capacity for assessing socio-economic, cultural, environmental, physical, and behavioral risk factors for certain health problems; for planning and management of health services; for assessing behavioral factors that influ-

BOX 2.15

Blair Research Institute: Building Block for ENHR Capacity Building

The Blair and De Beers Research Laboratories have evolved from a narrow disease-oriented focus to a broader, multidisciplinary and intersectoral, need-driven research orientation. The steady evolution of these pioneering laboratories has paved the way to ENHR in Zimababwe for the past decades, and demonstrated the benefits of country-specific research.

Blair Research Laboratory was established in 1939 as the Malaria and Bilharzia Research Laboratory with the objective of carrying out research on these subjects in liaison with the London School of Hygiene and Tropical Medicine.

De Beers Research Laboratory was established as a private-sector initiative with the primary objective of carrying out research and control services on bilharzia in the huge irrigated plantation of the lowveld. In 1966, the lab was donated to the government and became Blair's sister laboratory. Research expertise available within Zimbabwe enabled the development of disease control programs which are not only effective, but also relevant to the Zimbabwe experience and economically viable.

The National Malaria Control Program, which managed mosquito control using residual insecticides, was run by Blair for over two decades with the aim of preventing malaria epidemics. Since Independence in 1980, the intensity of the spraying program has been increased, and in 1983/84 its operation was decentralized. Further resources were allocated with the objective of reducing the mortality and morbidity attributable to malaria. With full decentralization of this program to provincial and district levels, the role of the Blair Institute has become more advisory.

Since Independence, the Blair Institute has become better known nationally and internationally for its work on the Blair Latrine (VIP), and the Blair Simple Hand Pump, Bucket Pump and Bush Pump. These technologies were developed locally in order to provide safe water and an acceptable excreta disposal system. They have now been adopted in other developing countries. The success of the technologies in Zimbabwe emphasizes the need to carry out research and development in the user country if the end product is going to be of maximum benefit.

Freed from disease control duties, Blair will concentrate more effort on operational research questions, and to focus on strengthening the health system. In 1990, a health system research unit was formally incorporated within the Blair Institute. Besides its primary role of training and supporting peripheral-area health workers in research methodology, the HSR Unit took on secretariat duties for the Medical Research Council of Zimbabwe, which hosts the country's multidisciplinary ENHR committee.

ence the use of specific health services; and for assessing health needs and improving the quality of care offered by health services.

A training program in HSR began in 1981, and in 1984 an HSR unit was created. In early 1990, the HSR unit was formally incorporated within the Blair Research Institute (see box 2.15). The institute has taken on the primary role of training and supporting peripheral-area health workers in research methodology. (See box 2.16.)

The major bottleneck in the HSR program remains the shortage of appropriately trained individuals who can serve as facilitators. In order to increase this pool Zimbabwe began trainer-of-trainers (TOT) workshops. As with other HSR training, the TOT workshop is multidisciplinary, and includes physicians, nurses, nutritionists, sociologists, epidemiologists, economists, educators, microbiologists, health administrators, and senior health managers. The aim of such multidisciplinary work is to build national health research capacity at all levels, as well as to institutionalize HSR.

Mexico

Because the government has supported capacity building and offered incentives for researchers, Mexico now has a critical mass of researchers trained in key research disciplines.

Since the 1970s serious efforts have been made to strengthen public health research. There are now eight postgraduate programs in epidemiology, pub-

BOX 2.16

HSR Training Workshops in Zimbabwe

The HSR training program launched by Blair's HSR unit consists of three parts: a two-and-a-half-week training workshop on how to develop a research proposal; the implementation, within a period of not more than six months, of the research project proposed; and a two-week workshop on data analysis and report writing.

Targeted at multidisciplinary teams of health workers from research institutes, municipalities, and central, provincial and district levels, the workshops are facilitated by experienced researchers. Projects undertaken through HSR training workshops have included:

Title of Project	Study Locality
1. Study of reasons for defaulting from outpatient treatment among tuberculosis patients	Masvingo Province
2. Study on the maintenance of district council clinics	Midlands Province
3. Investigation into factors affecting staffing levels of health institutions	Matebeleland North Province
4. Investigation into reasons for the failure of the Beitbridge Sanitation Project	Beitbridge district
5. Study to investigate the pattern of workshop attendance by health workers	Mashonaland West Province
6. Study of the utilization of data in the planning and management of health services	Buhera district
7. Study of factors contributing to low coverage of growth monitoring at health facilities	Seke and Marondera districts
8. Investigation into the possible factors influencing the impact of an intensified water and sanitation program on prevalence of diarrheal diseases	Gutu district, Masvingo Province
9. Study of factors influencing underutilization of maternal services	Guruve district
10. Investigation into coordination between health departments in the delivery of health services	Mutoko district
11. Factors associated with overcrowding in the wards at Marondera Provincial hospital	Marondera district
12. Study of the factors which affect post-natal attendance at health centers	Goromonzi district
13. Study into the reasons for the failure of the supplementary food production program	Murehwa district

To date, 9 of these 13 proposals have been developed and implemented; so far, 67 health workers from all eight provinces of Zimbabwe have undergone training on how to develop a health systems research proposal.

lic health, and health services research. During the 1980s, public health research began to consolidate. Three new academic centers were created: the Center for Public Health Research (CISP), the Center for Research in Communicable Diseases (CIID), and the Center for Technological Applications in Health. In 1987, along with the School of Public Health, CISP and CIID formed the National Institute of Public Health (see box 2.17). At about the same time, the General Directorate of Epidemiology of the Secretary of Health started a new research training program aimed at studying communicable diseases, and created a National Health Survey System.

In 1984, the Mexican government began the National System of Researchers. This system strengthens the research capacity of the country through formal recognition and tax-free extra salary support to researchers (see box 2.18).

While salaries have been somewhat improved and new posts created, however, shortages persist in the infrastructure for basic research, medical equipment for clinical research, and computers and software for public health research.

BOX 2.17

The National Institute of Public Health in Mexico (INSP)

Founded in 1987 through a merger of three academic organizations — the School of Public Health of Mexico, the Center for Research on Infectious Diseases, and the Center for Public Health Research — the INSP is a semi-autonomous public organization, chaired by the Minister of Health but with its own legal charter and budget. As an umbrella organization for two research centers and the school, it provides Mexico, as well as other developing countries in Latin American, with both an academic nucleus for the interdisciplinary study of critical health issues and an important resource for advanced training.

The INSP provides professors, students and researchers with all the resources necessary to carry out their activities, in part through its existing infrastructure and in part by establishing links with other organizations. Although domestically based, the institute operates under a strategy that provides ample opportunity for the internationalization of both its training and research findings.

A sample of planned long-term strategic projects illustrates this trend:

- decentralization of operations (including the establishment of four Nuclei for Health Systems Development);
- creation of a Center for Studies in Environment and Health;
- selection of a community for longitudinal studies;
- establishment of a Unit of International Studies on Public Health.

BOX 2.18

System of National Researchers in Mexico

The professionalization and recognition of research as a legitimate and useful occupation were not easy to achieve in Mexico, as has been the case in many developing countries. Established in 1984 by the Secretary of Public Education, the System of National Researchers (SNI) is an independent organization which has the authority to designate professionals in all scientific disciplines as "National Researchers." This title offers a great deal of prestige and a permanent small addition to the institutional salary. The system recognizes various levels of achievements which include Candidates (master's degree level and some publications) and Researchers, levels I, II, and III (doctoral degrees and increasing levels of scientific accomplishment). In 1988, 262 clinical and 114 biomedical researchers participated in the SNI. Public health researchers have recently been chosen as SNI members, but their number is still small. Once chosen as SNI members, the professionals must update their SNI CVs annually in order to justify their continued recognition and salary subsidy.

Mexican capacity-building efforts for the past decade have concentrated on training individuals more than on strengthening research institutions or improving the research environment.

Brazil

The FIOCRUZ institutional complex integrates activities in teaching; research; and development, production, and quality control of health products and services. The National School of Public Health (ENSP) is the largest public-health-related institution in Brazil, and has made the most important contributions to epidemiology and health policy research in the country.

Element Five: Networking

"Nurturing individual scientific competence and leadership; strengthening institutions; establishing strong linkages between research and action agencies; and reinforcing national institutions through international networks are all important elements of capacity building."

The problem

- How can effective communication and interaction among all partners in health be achieved and maintained?
- How can those engaged in the ENHR movement aid their neighbors in implementing similar programs in their own countries?
- How can ENHR programs best make use of already existing international networks and communication vehicles?

In some countries, researchers still work in isolation, interacting little with their peers in other health-related disciplines, with the other partners in health in their countries, and with the international health and development community. Without adequate exchange of ideas among themselves, in order to discuss and challenge one another's plans and findings, researchers may be repeating work that has already been done.

Health researchers who have established linkages outside of their own institutions often do so through narrowly-focused international networks or programs and may fail to establish exchange across disciplines or sectors with other partners in health.

Some efforts have been made to end this debilitating isolation. Existing networks provide important resources to support and sustain national and international ENHR movements, but would require strengthening and broadening in order to meet the needs of ENHR. National, regional and international networks have been established to link up scattered individuals and institutions, sustain regular flow of communication among them, and pool resources for training and collaborative research. The primary focus of existing networks varies. Several international and regional networks focus primarily on local capacity building — e.g., WHO/HRP-TDR field training programs; the International Clinical Epidemiology Network (INCLEN); the International Health Policy Program (IHPP); the Community Oriented Educational Institutions for Health Sciences; the Field Epidemiology Training Program of the Centers for Disease Control (CDC/FETP); and UNICEF's International Child Development Center. Others link professionals who have common disciplinary interests — e.g., the International Epidemiological Association. Within individual countries, however, various networks' activities often compete for scarce human resources in the pursuit of collaborative research. Better integration of these activities within each country would reduce duplication and dispersion of networks' efforts.

The goal

National, regional, and global dissemination of information and exchange of ideas on all aspects of ENHR could enable researchers and decision makers to learn from successful experiences elsewhere, and to extract the lessons that are relevant to local situations.

The challenge

The challenge is to define the most appropriate means of communication to facilitate and sustain exchanges:

- National networks should aim at bringing all health partners together;
- Regional networks should facilitate exchanges among neighbors both of information about common problems and of technical expertise;
- International networks should facilitate partnerships among developing countries and between them and their peers in developed countries, especially in relation to global research. This would strengthen North-South as well as South-South collaboration for research and training.

National networks

National networks are often more difficult to establish than regional or international networks, but are essential for the facilitation of dynamic relationships among research, policy and action at various levels of the health system, and for the establishment of closer linkages between different geographical areas.

Regional networks

The exchange of information among neighboring countries which face similar problems and are at similar stages of development requires collaborative processes to pool available technical and human resources. Countries with well-established research centers can provide technical assistance to less-developed countries in their region. Such South-South collaboration would prove mutually beneficial.

International networks

The international ENHR movement can facilitate exchange among countries, increase credibility and stability of national ENHR efforts, and attract international funding for ENHR. Global partnership for ENHR does not necessarily require new organizations. Good national institutions can serve as foci for international collaboration. The Commission recommended the strengthening of national institutions to serve international roles, rather than creating new international research centers like those of the agricultural research model. International partnerships should be approached as peer relationships based on mutual respect, and should avoid domination by developed-country institutions, as well as exploitation solely for funding purposes by any party.

Communication means for ENHR networking

ENHR organizers should use various mechanisms, chosen for effectiveness with given audiences, for promoting communication among researchers and between them and other groups. These may include:

- newsletters to exchange information and experiences;
- journals on public health policy and management;
- executive summaries of research results with an analysis of their significance for policy and action;
- media messages — radio, TV, newspapers — to inform the public of health research results;
- training workshops to support young researchers;
- regional and international conferences.

The Task Force on Health Research for Development has taken over the publication of the *ENHR Forum*, an international newsletter created by the Commission to share information on the global development of the ENHR movement. Some countries have started national newsletters to report activities in greater depth.

Optimal dissemination of research results would require dual reporting: one version for scientific journals, and shorter executive summaries for decision makers. Scientific journals are important for the dissemination of ENHR research results within the research community. For this purpose, ENHR-re-

BOX 2.19

Objectives of the Task Force on Health Research for Development

To promote, facilitate and support ENHR in countries that wish to undertake it.

- to promote and facilitate the strengthening of national health research capacities in association with ENHR;
- to work with 8 to 10 countries to analyze and compare their ENHR experiences.

To develop and evaluate options for longer-term mechanisms for the support of ENHR.

- to develop links with international agencies (in particular WHO and UNICEF) and international "Networks" active in health research;
- to present the work of the Task Force to countries and national and international agencies.

To promote synergism between research on global health problems and ENHR.

- to serve as a "broker" for international research initiatives on selected global health problems;
- to link research on global health problems to country ENHR endeavors.

BOX 2.20

The Puebla Declaration

This statement was prepared during a meeting of international health networks at Puebla, Mexico, January 1990.

1. We, the undersigned, consider essential national health research (ENHR), as proposed by the Commission on Health Research for Development, a powerful tool for improving health in all countries, particularly in those with the highest burden of preventable disability and premature death and the greatest need for the promotion of positive health.
2. We strongly endorse the Commission's emphasis on building and strengthening institutional capacities to undertake essential national health research within developing countries, so that they might deal as effectively as possible with the wide range of health problems facing them.
3. We fully support the Commission's commitment to ensuring the full right and responsibility of developing countries in establishing their priorities for essential national health research, and in developing their plans to strengthen capacities for undertaking it. We believe that the activities of the international networks with which we are associated should support the efforts of developing countries in this direction.
4. We recommend reviewing and re-aligning as necessary the activities in which we are engaged to ensure that they contribute effectively to the realization of country-specific essential national health research objectives. We also recommend that the networks with which we are associated seek ways of cooperating in order to enhance our collective ability to provide assistance toward this end.
5. We invite others who share these same beliefs to join with us in this endeavor to create an international movement for the reinforcement of developing countries' efforts to strengthen their essential national health research capacities.

Signatories to the Puebla Declaration

Victor R. Neufeld
Community Oriented Educational Institutions for Health Sciences

Richard H. Morrow
Fieldlincs Networks of TDR

Jose Kuthy-Porter
International Clinicial Epidemiology Network

Stanley Music
Field Epidemiology Training Program (CDC)

Davidson R. Gwatkin
International Health Policy Program

Yvo Nuyens
Health Systems Research, WHO

Aklilu Lemma
Deputy Director, International Child Development Center, UNICEF Florence

Scott Halstead
National Epidemiology Boards

Nirmala Murthy
Community Epidemiology Network (India)

lated news could be covered by existing public health journals of various sectors, rather than through the creation of a new ENHR journal.

ENHR workers in Mexico developed a format for executive summaries which ensures appropriate and timely dissemination of research findings to policy makers in a language that meets their needs.

Finally, those involved in ENHR efforts have only recently begun to develop effective communication strategies for dissemination of research results to the public; this aspect of networking requires attention if optimal communication linkages are to be achieved.

Experiences to date

International Networking for ENHR

The wide distribution of over 12,000 copies of the Commission's Report and the publishing of the *ENHR Forum* initiated international networking activities for ENHR. Several mechanisms have since been established to sustain an active global ENHR network system.

Task Force on Health Research for Development

One of the purposes for which the Task Force on Health Research for Development was established is to facilitate international networking activities for ENHR. (See box 2.19.) The Task Force has established its secretariat at UNDP, Geneva. (See Appendix III for a list of Task Force members.)

The Puebla Group

The Puebla Group of Networks collaborating on health research for development was formed at the January 1990 meeting of the International Clinical Epidemiology Network (INCLEN) in Puebla, Mexico. At that time, representatives of eight networks signed a declaration of support for the concept

BOX 2.21

Networking in the Philippines

The Philippine Council for Health Research and Development (PCHRD) and the Department of Health (DOH) have developed several research networks within the Philippines, as well as links with international agencies. These networks are important building blocks for ENHR.

PCHRD has established several inter-institutional research networks in Manila as well as decentralized mechanisms in peripheral regions:

The Ermita Health Science Community groups 11 institutions in the Ermita area around the nucleus of the University of the Philippines in Manila, and pools together resources in an effort to offer research-based solutions to health problems facing Manila. Dialogue between this organization and the DOH may highlight research which can lead to new policies or improve existing health programs.

PCHRD has also established links among institutions in the various regions of the Philippines, through Regional Health Research and Development Committees (RHRDCs) that have already been established in many of the 11 regions. Each committee consists of staff of the DOH Regional Health Office, deans and key officials of medical schools, and heads of research institutions. These committees are responsible for the planning of health research promotion activities for their region. They also have the authority to approve small research projects to encourage beginning researchers. The RHRDCs will serve as a conduit for the development and implementation of ENHR projects at the regional and provincial levels.

The DOH has developed networks for research which include:

1. The Regional Research Network for Social Scientists (Child Survival Program);
2. The Health Care Financing Research Project (Managment Science for Health); and
3. The Urban Health and Nutrition Project.

In addition, the DOH has direct linkages with other academic research institutions, including the College of Medicine, University of the Philippines-Manila (Hepatitis B Control Program, studies on herbal medicine); the College of Public Health, UP Manila (studies on schistosomiasis, health systems research at the provincial and district levels); the Philippine Institute for Development Studies (health policy research); and the Foundation for People's Concerns (Logistics Study for Medicines and Supplies).

Other networks in specific areas (the National Nutritional Council, the Population Commission of the Philippines, and the Interagency Committee on Environmental Health, for example) may be used for collaborative research.

International linkages include ties to international organizations (e.g., WHO, UNICEF); foreign government agencies (e.g., USAID, IDRC, Australian Development Assistance); international financial institutions (e.g., World Bank, Asian Development Bank); and international donor agencies.

These linkages were formed in order to strengthen health programs and improve the provision of health services to the community. They can also be tapped in order to build and sustain the capacity for research, not only within the country but also in collaboration with other developing and industrialized countries. Networking can also aid in the rapid assembly of a critical mass of researchers to study a given problem. Strengthening of these linkages would bring together policy makers, health executives, research managers and consumers of research, and therefore accelerate the use of research results for the improvement of health care delivery.

BOX 2.22

Networking in Zimbabwe

The newly created Health Systems Research (HSR) Unit of the Blair Institute in Zimbabwe is in an ideal position to coordinate national research activities through a network of institutions and individuals involved in health research in the country. These include various departments of the University of Zimbabwe, the Blair and de Beers Research Institutes, provincial and district health teams, and other national institutions, as well as international and non-governmental organizations based in Zimbabwe. Working with the Medical Research Council and the Research Council of Zimbabwe, the HSR Unit could facilitate interactions among these contributors to health, with a short-term aim of holding regular consultative and research meetings, and the ultimate goal of promoting and decentralizing health research from the national level to provincial, district and ultimately community levels. It has been proposed that the unit publish a health research bulletin or newsletter as a vehicle for communication between researchers and program managers.

At a regional level, the HSR Unit has been involved in networking activities to develop HSR. It has:

1. hosted intercountry workshops on HSR;
2. offered a training-of-trainers course on HSR in which representatives from neighboring countries participated; and
3. facilitated HSR training courses in the region.

The future of regional networking activities in HSR depends on the creation of a new coordinating body or program which can replace the joint WHO/DGIS/RTI program when it comes to an end.

of ENHR. In so doing they also committed themselves to closer cooperation in assisting national ENHR efforts. (See box 2.20.)

Considerable effort has since been devoted to helping strengthen the "Puebla Group." Several of the network representatives assembled in the Task Force's Geneva offices in mid-March 1991. From their discussion emerged a series of concrete steps to be taken and a division of responsibility among those present. Among the first steps was the preparation of an information handbook on the different Puebla networks for the use of developing-country participants wishing to establish links with the representatives of other networks in their countries. Other activities agreed upon were: the planning of an inter-network newsletter; the enhancement of inter-network telecommunication ties; and preparations for a full-scale meeting of Puebla network representatives at the 1992 INCLEN annual conference.

UNICEF

UNICEF has made a commitment to support the ENHR approach, broadening it to cover all the fields of UNICEF collaboration at country level in the countries where it operates. It has labelled this approach "essential national research for children (ENRC)."

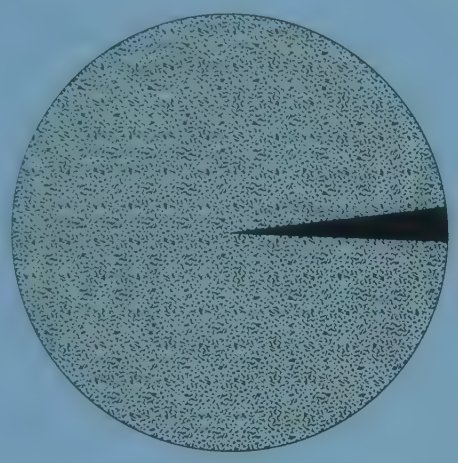
National and regional networking for ENHR

Several existing national and regional networks for health research provide important building blocks for widespread ENHR-related interaction and exchange; they may wish to expand their scope and increase their inclusiveness in order to support local ENHR efforts. (See boxes 2.21 and 2.22.)

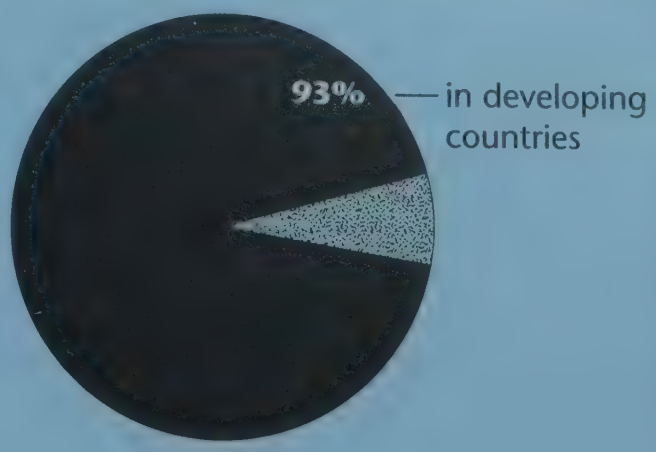
BOX 2.23

Global Funding

Annual Global Investment in Health Research



World's Burden of Preventable Mortality



Source: Commission Report

Element Six: Mobilizing Financial Resources for ENHR

"The proposed expansion of research on health problems of developing countries will require substantial increases in funding. We recommend, therefore, that developing countries, bilateral and multilateral development agencies, industrialized-country research agencies, foundations, NGOs, and the pharmaceutical industry all raise funding levels for health research."

The problem

- How can sufficient funding for ENHR be mobilized?
- How can appropriate allocation of funds be ensured?
- What activities will require funds, and which are the best sources for each type of financial support?

Global funding — international and national — for health research in developing countries has proven inadequate to meet the need. In addition, the resources that have been available have often failed to be allocated appropriately. The Commission found that only 2.5 percent — $835 million — of the annual global investment in health research is spent on research conducted in developing countries, despite the fact that the people in those countries suffer 93 percent of the world's burden of preventable mortality. Moreover, a large portion (82 percent) of this funding is provided by the developing countries themselves. (See box 2.23.)

Funds from national and external sources are required to initiate and sustain ENHR efforts. Each element of ENHR requires resources. Funding for ENHR must be allocated on an overall program rather than a specific project basis, targeted at long-term rather than short-term objectives, and directed toward internally rather than externally determined research priorities. National ENHR movements must therefore design integrated funding strategies which can support both on-going work, such as advocacy and operation of the national ENHR mechanism, and the more visible aspects of ENHR, such as research projects and research capacity strengthening. (See box 2.24.)

BOX 2.24

Funding Patterns

	Most common pattern	ENHR
Focus	single project	integrated program
Time frame	short-term	long-term
Priorities	externally determined	internally determined

The goal

The goal is to mobilize sufficient national and international funding to implement and sustain national and global ENHR movements. The Commission has set a precise target:

"Developing countries should invest at least 2 percent of national health expenditures in research and research capacity strengthening, and at least 5 percent of project and program aid for the health sector from development aid agencies should be earmarked for research and research capacity strengthening."

Both types of investment should be deployed to implement country-specific and global research on priority issues, and to increase research capability.

The challenge

The major challenges are to develop effective strategies to increase both national and international funding for health research; to develop the research management capacity required to coordinate funding needs of a national ENHR plan; and to ensure sustainability of national ENHR efforts by progressively increasing national funding to support them.

Resources for establishing the ENHR concept

Many changes must take place in order to initiate the ENHR effort in a country. The effort to sensitize all partners in health to the need for ENHR, as was described in the first element, implies coordination, organization of meetings, and preparation of publications. Until ENHR is well established as a self-sustaining movement, there is a need to mobilize seed funds to support initial and pilot activities. The Task Force on Health Research for Development has provided seed money to facilitate the early stages of national ENHR efforts in some countries. Prime movers should mobilize resources for these stages from both national and external sources. (See box 2.25.)

Resources for operating the ENHR mechanism

The operation of the ENHR mechanism requires funding for office equipment, communications, staff time, capacity building, etc. This kind of financial support should increasingly be provided by local funds, in order to ensure the permanence of such a mechanism.

BOX 2.25

Required Funding Resources for ENHR

Stage of program	funding needs
1. Establishing the ENHR concept; on-going advocacy	■ coordination ■ organizing meeting ■ publications
2. Operation of the ENHR mechanism	■ prioritization of projects ■ capacity building ■ networking
3. Implementing the ENHR plan	■ research projects ■ technical support to young researchers ■ improving information system

Each step requires both domestic and international funding. Countries should strive to increase local funding as the process gets underway, in order to ensure the permanence of the ENHR program, but initial funds from outside may be necessary until the ENHR concept has been established. Government, whenever possible, should contribute directly to the funding of ENHR activities.

Resources for implementing the ENHR plan

"Clearinghouses" for dissemination of information on available local and external funding sources are critical resources for increasing and diversifying the sources of funding for national and global ENHR movements. National ENHR mechanisms should provide such a service in each country. The Task Force on Health Research for Development has a mandate to reinforce national financing efforts by acting as broker between countries and external funding sources — multilateral and bilateral aid, foundations, private sources, pharmaceutical industries. (See box 2.26.)

ENHR also implies a re-orientation of donor-recipient relationships. Developing countries should assume a leadership role and guide the allocation of funds to support internally defined priorities for research. Participation in the form of local funding is critical, therefore, in ensuring the "ownership" of ENHR efforts at national level, and in demonstrating national commitment to ENHR. Whenever possible, governments should be involved in local funding for ENHR, and domestic contributions in cash or kind should be encouraged.

BOX 2.26

Financial Assistance via the Task Force

A group of agencies and Foundations provide the resources for the Task Force on Health Research for Development. These include IDRC, SAREC, the Edna McConnell Clark Foundation, the Rockefeller Foundation, the Ford Foundation, the Aga Khan Foundation and the Pew Charitable Trusts. Other agencies and foundations have pledged additional support.

A major part of the work of the Task Force and its Management Support Group will be the mobilization of the resources required by countries to implement their plans for ENHR. These resources are sought through a variety of bilateral and multilateral channels. The Task Force itself supports national planning initiatives for ENHR, including workshop and consultancy costs, at the request of national authorities. The Task Force also makes small "seed" grants to national institutions to begin the implementation of national ENHR plans.

BOX 2.27

Internal Funding Assistance

To maximize the chances for funding, the ENHR mechanism should have the research management capacity to provide technical support for each step necessary to complete successful fund raising:

- identifying potential funding sources;
- assisting in the development of a research proposal and in writing a grant application;
- monitoring the distribution of research funds;
- administering research funds;
- assisting in the preparation of progress reports and final reports; and
- assisting in the dissemination of research findings.

In addition to traditional funding for promising new projects, the ENHR mechanism should pursue grant opportunities for groups or institutions; ideally, this funding could then be allocated to various projects by the institution or by the country's ENHR mechanism.

To attract interest from external donors, utmost priority should be given to the development of a credible national ENHR plan. Such a plan should have a clear focus, be manageable, and include concrete, measurable objectives for short-, medium- and long-term achievements. The plan should define priority research areas and capacity-building needs that require special attention. (See box 2.27.)

Ensuring long-term sustainability

The commitment of the national government and increased demand for research results by policy makers, health care providers, donors, and the public at large are essential if national funding for health research is to be increased. The information base on health problems should be used as a means of soliciting interest and increasing awareness of research's potential contributions to increased cost-effectiveness of health strategies and alternative approaches to problem solving. Some funding should therefore be allocated for support of optimal dissemination of

BOX 2.28

Debt-for-Health-Research Swaps

Foreign debts of developing countries can be converted to local currency that is earmarked for health research. The process requires strong in-country leadership, a sound project, and good relations with the finance ministry; but when it works, as it did in Mexico, it can augment donations to health research significantly.

Generally, an NGO or other agency that has hard currency to contribute to ENHR purchases debt at discounted secondary-market prices and converts it to local currency through the central bank of the debtor nation. The local currency is then used for pre-arranged purposes, and the country has eliminated a certain amount of foreign debt without having to spend scarce foreign exchange.

A recent successful swap in Mexico involved a Rockefeller Foundation grant to the Mexican Advisory Board in Epidemiology. FAPRODE, a private Mexican foundation, and the Mexican Health Foundation, led by Dr. Guillermo Soberon, former Mexican Minister of Health, were intermediary organizations in the swap. The Task Force acted as facilitator. The purchased debt was converted at the Central Bank of Mexico to yield 70 percent more money (the equivalent in pesos of $600,000) than had been provided by the original grant ($350,000). Another swap worth $400,000 was completed for the Mexican National Institute of Public Health.

In 1990 and 1991, the Commission and Task Force facilitated $1 million worth of swaps for health research in Mexico. Several other countries have expressed keen interest in debt-swaps for health research.

Less commonly, holders of external debt may simply donate the face value of the original loan, eliminating the need for the intermediary donor organization. For example, the Bank of Tokyo recently announced a debt donation of $1 million for environmental protection in the Philippines and Latin America. The Bank of America has donated $6 million worth of debt for nature conservation in Mexico and Ecuador, and the Midlands, Deutsche, and Dresdner Banks donated Sudanese debt to UNICEF.

BOX 2.29

Impact of Economic Crisis in Mozambique

Faced with the economic crisis of the 1980s, the government of Mozambique signed an agreement with the IMF/World Bank in 1987. The agreement required, as is usual, restructuring of the economy and reduction of government input into the social welfare system of the country. At the beginning of the 1980s, health services received over 10 percent of the national budget. By the end of the decade, their portion was more than halved, and per capita expenditure on health declined. Inevitably, user fees for health services were introduced, and recent reports indicate that use of these services has consequently declined significantly. Devaluation of the currency, increasing economic crises, and debilitation as a result of war have had a considerable effect upon all sectors.

The health research institutions of Mozambique have been hit hard as well. In spite of the current inflation rate of approximately 70 percent, the annual budget for most institutions has been held to a one percent increase per year. Not only are capital expenditures frozen, but plans to establish a competent research capability have been crippled. As the real value of wages and salaries has declined, motivation has also declined, and survival on low salaries has become difficult. Moreover, the low pay, combined with unclear career prospects, has steered potential researchers away from the field: doctors can earn more money doing clinical work, and scientists face far better career prospects in private firms and other research institutions.

Despite such obstacles, however, the well-structured capacity-building plan developed by the ENHR group in Mozambique has been able to attract sufficient external funding for the first steps toward implementation.

BOX 2.30

National Foundations for Health Research

FUNSALUD

In 1985, a group of Mexican businesspeople created the Mexican Foundation for Health (FUNSALUD), in order to contribute to the improvement of the health status of Mexico. The specific mission of the Foundation is to aid in the strengthening of science and technology for health, as well as in the development of human resources in this field. FUNSALUD identifies priority health problems and directly generates specific projects aimed at addressing them.

The main strategy of FUNSALUD is to unite philanthropic organizations with the talent and interest of entrepreneurs, researchers, and health workers. Specific strategies include: efficient transfer and management of funds free of cost tc beneficiaries and without complex administrative procedures which could hinder research; knowledge exchange and dissemination of research results with regard to scientific and technologica advances; promoting the transfer of innovations to appropriate health institutions, researchers, specialists and experts; bringing together philanthropic institutions, international organizations, national business, and private donors for the purpose of ensuring continuity in the accomplishment of FUNSALUD objectives; and promotion of the use of local philanthropy for addressing specific problems in different geographic areas, through the creation and coordination of FUNSALUD State Councils.

To date, FUNSALUD has managed 167 funds totalling 26.5 billion pesos. These funds have enabled health institutions and workers to carry out specialized projects which include both capacity-strengthening efforts (beginning with the repatriation of 38 Mexican scientists who were studying or working in other countries) and research on such topics as hip replacement surgery and a regional vaccine system for Latin America and the Caribbean.

FUMIS

The Mozambican Foundation for Health Research (FUMIS) is also an independent foundation whose objective is to ensure further funding and technical support for young Mozambican health researchers. The result of an initiative of the National Institute of Health, FUMIS focuses primarily on researchers undertaking country-specific research in the peripheries of the country. It provides consultancy, tutorial and supervisory assistance, and small financial contributions (up to US$ 5,000), as well as organizing workshops on research methodology for recipients of such grants. FUMIS received an initial US$ 100,000 grant for two years from DANIDA (the Danish International Development Agency) and expects to receive funds from the Mozambique government and other funding agencies. But the foundation will operate autonomously to ensure independence of research.

The foundation is directed by a board which includes members of the National Directorate of Health, the National Institute of Health, the Regional Center for Health Development, the Faculty of Medicine, and other socially- or biologically-oriented departments of the University of Maputo. The executive body of the board consists of members of the scientific community.

research results to every relevant audience in order to demonstrate the benefits of health research for improving the quality of life.

Innovative funding strategies

Innovative funding strategies are needed to increase the resource base available for health research. These strategies should aim at reaching out to additional funding sources — e.g., local industries (for instance, pharmaceutical companies and insurance companies) and philanthropic organizations. Governments could, for instance, provide tax incentives to increase contributions to health research from private sources, or earmark certain taxes for use in research. A most promising innovative mechanism is the debt-for-health-research swap. (See box 2.28.)

Experiences to date

The debt crisis and the worsening economic situation have adversely affected health research and research capacity building in most developing countries. Consequences have been particularly severe for researchers and research institutions in Sub-Saharan Africa (see box 2.29).

Credible ENHR mechanisms and well-structured ENHR plans have already demonstrated their importance as a means of increasing funding for research and research capacity building in several instances. The ENHR committee in the DOH in the Philippines recently received funds to support one year's worth of ENHR activities. In Mozambique, IDRC, SAREC and GTZ have committed funds to support long-term research capacity building in the country (see also box 2.30).

Thailand

In Thailand, the NEBT has been supported by the Rockefeller Foundation since 1986. One of the key challenges for the NEBT is the question of sustainability, once the current external support from Rockefeller stops. The NEBT has yet to convince the Thai government to earmark 2 percent of its health budget for ENHR.

Mexico

In Mexico, the government and private groups have provided significant financial support for health research and capacity building (see box 2.30). In addition, the first debt for health research swap was successfully completed in October 1990. This is a promising innovative mechanism for increasing funding for health research. A study, commissioned by the Task Force and supported by the Edna McConnell Clark Foundation, is presently exploring the potential for debt-for-health-research swaps in other Latin American countries.

Brazil

The economic recession and fiscal crisis in the Brazilian State have an obvious impact on FIOCRUZ and other health research and development institutions in the country. This situation of drastic funding restrictions and severe decrease in new investments risks jeopardizing national science and technology institutions and, as a consequence, their decisive support to health policy projects and activities.

With the beginning of the redemocratization process underway in Brazil, it was possible to identify a moderate increase in national investment in health research. However, as a consequence of recent economic and political crisis in the country, a significant decrease has again occurred in investment in health research for development, in both biomedical and public health areas.

Element Seven: Evaluation of ENHR

The problem

- How can the effectiveness of ENHR be assessed?
- What are some of the indicators of successful implementation of the ENHR strategy?
- How can such information be used to improve national and international ENHR efforts?

The ultimate goal of ENHR is to use research to promote health and development on the basis of equity and social justice. An effective evaluation process should attempt to quantify ENHR's specific contributions to health and development. But since ENHR is only one of many social, economic and political strategies that have been initiated in recent decades toward these ends, such evaluation will be a difficult and complex task. And since it will take a long time before populations realize the full benefits of ENHR, it is necessary to devise mechanisms for monitoring progress at intermediate stages on the path to achievement of the goal.

For some developing countries, the adoption of ENHR will imply making relatively minor adjustments in their current programs and practices. They may need to reaffirm their commitment to the goal of equity in health and development; to intensify aspects of their research agenda that deal specifically with the problems of the poor and disadvantaged; to improve mechanisms for assuring quality of research projects; to intensify the process by which research findings are translated to policy and action; to broaden the base of support for health research; and to widen the network for consultation and decision making.

In other countries, the adoption of ENHR will require a radical change in the way health research is managed. It will involve a review of national policies in health and other sectors with regard to equity and social justice. It may require major reorganization of the process by which the health sector makes policies and plans programs — specifically, demanding the use of objective scientific analysis as the basis for policy making and program planning. It may be necessary to create mechanisms that can involve, in

meaningful ways, representatives of other sectors and of the community at large. Adoption of the ENHR strategy will require researchers to pay more attention to the urgent health needs of their communities and to provide their research results in terms that make them valuable to policy makers, health care givers and the population at large. It may be necessary to establish effective peer review mechanisms to assure the high quality of research.

These changes in the management of research should go beyond cosmetic changes in the names and titles of people and programs — and beyond the token appointments of a few non-medical people to critical decision-making bodies.

The goal

The goal is to develop mechanisms and criteria for monitoring ENHR progress at the country level and, more broadly, to evaluate the movement, both in various regions and globally. The aim would be to reinforce and intensify successful elements, to close gaps and to strengthen weak areas. Careful analysis of the experiences gained in each country would help in making necessary local changes; documentation and dissemination of the information would provide guidance to other countries.

The challenge

The challenge is to develop appropriate benchmarks for monitoring the development of ENHR in each country. Because developing countries vary so much in the level of development of health research and because ENHR has to be carefully aligned to local circumstances and needs, it is not possible to provide a simple checklist for monitoring the movement in all countries. The table in box 2.31 sets out one feasible approach for monitoring ENHR at the country level. First, it is necessary to define clear objectives for each of the seven elements and to devise relevant process and output indicators for each objective. The more carefully the goals are defined, the easier it will be to monitor progress. For example, if one of the goals of the first element, promotion and advocacy, is to convince policy makers, health care givers and researchers about the value of ENHR, then the process can be monitored by examining the effectiveness of communications among the relevant groups.

It is also necessary to monitor the progress of the ENHR movement globally. The Commission has proposed the establishment of a global mechanism for monitoring health research in developing countries. The Task Force on Health Research for Development, charged with the responsibility of initiating actions on the report of the Commission, is currently studying this recommendation. Such a mechanism should include responsibility for monitoring ENHR on a global scale.

At the global level, some of the benchmarks for monitoring progress are:

- How many developing countries have formally adopted the ENHR concept as their strategy for managing health research?
- How many countries have established ENHR mechanisms, and to what extent are the mechanisms operating effectively?
- What changes have taken place in the process for defining health research priorities in developing countries, and to what extent are the priorities focused on the problems that affect the poor and other disadvantaged groups?
- What progress has been made in strengthening research capability in developing countries with regard to their ability to carry out country-specific research and to participate in global health research?
- What proportion of national health budgets are committed to research? What external resources have been made available for supporting health research and research capabilities in developing countries?
- What is the pattern of information flow among researchers and between them and other partners in health — policy makers, health care givers, and the population? To what extent have researchers in developing countries linked with their peers in other developing countries ("South to South") and in developed countries ("South to North")?
- Have developing countries established mechanisms for monitoring their progress in the development of ENHR? Has the international community established a mechanism for monitoring global trends in health research relevant to developing countries?

BOX 2.31

ENHR Evaluation Framework

Element	*Objectives*	*Process Indicators*	*Output Indicators*
1. Promotion	■ Convince policy makers, health care givers and researchers about the value of ENHR ■ Obtain political commitment of government and academic commitment of researchers to support ENHR	■ Is there effective communication among relevant groups about ENHR? ■ To what extent are researchers taking note of national priorities?	■ Publication of a national policy statement on ENHR ■ Issuing of a plan for establishing ENHR institutions and processes
2. ENHR Mechanism	■ Create a system to ensure effectiveness and sustainability of ENHR	■ To what extent are there forums for effective participation of all relevant groups? ■ To what extent are all relevant groups represented?	■ Existence of formal operational systems for implementing ENHR ■ Publication of a working program document
3. Setting Priorities	■ Set forth an interactive process for identifying research topics and issues relating to the research infrastructure	■ Have there been objective analyses for identifying and prioritizing research topics and for developing research infrastructure?	■ Published research agenda ■ Strategy for addressing the development of research information
4. Capacity Building	■ Develop the critical mass of researchers and the institutional infrastructures for implementing ENHR	■ Have there been concrete actions taken to enhance performance of research programs and to strengthen and build capacity?	■ Number and appropriate mix of scientists trained and employed ■ Publications of results of completed projects ■ Investments in research infrastructure for ENHR ■ Examples of policies and actions based on research results

BOX 2.31 (cont'd)

Element	*Objective*	*Process Indicators*	*Output Indicators*
5. Networking	■ Strengthen linkages and support between ENHR groups at national, regional and global levels	■ Are there functional linkages among ENHR groups?	■ Formal means of communication among ENHR groups: newsletters, journals, workshops ■ Joint activities for research and training ■ Sharing of resources
6. Financing	■ Increase national and international financial support to all phases of the development of ENHR	■ Are there arrangements for funding ENHR activities? ■ To what extent are different sources of funding coordinated?	■ Amount of funds from national (public and private) and external sources ■ Proportion of national health budget allocated to research ■ Proportion of externally funded health programs allocated to capacity building
7. Evaluation	■ Develop and strengthen mechanisms for relevance and quality of research projects ■ Ensure rapid translation of research results into effective programs	■ Have peer review mechanisms been established and are they functioning effectively? ■ To what extent have research findings influenced policy and action?	■ Quality of research work done by national scientists ■ Effective dissemination and utilization of research findings

Chapter Three: ENHR Process in Selected Countries

Each country background paper focuses on the process being followed in the development of problem-driven research and the establishment of closer linkages between research, policy and action.

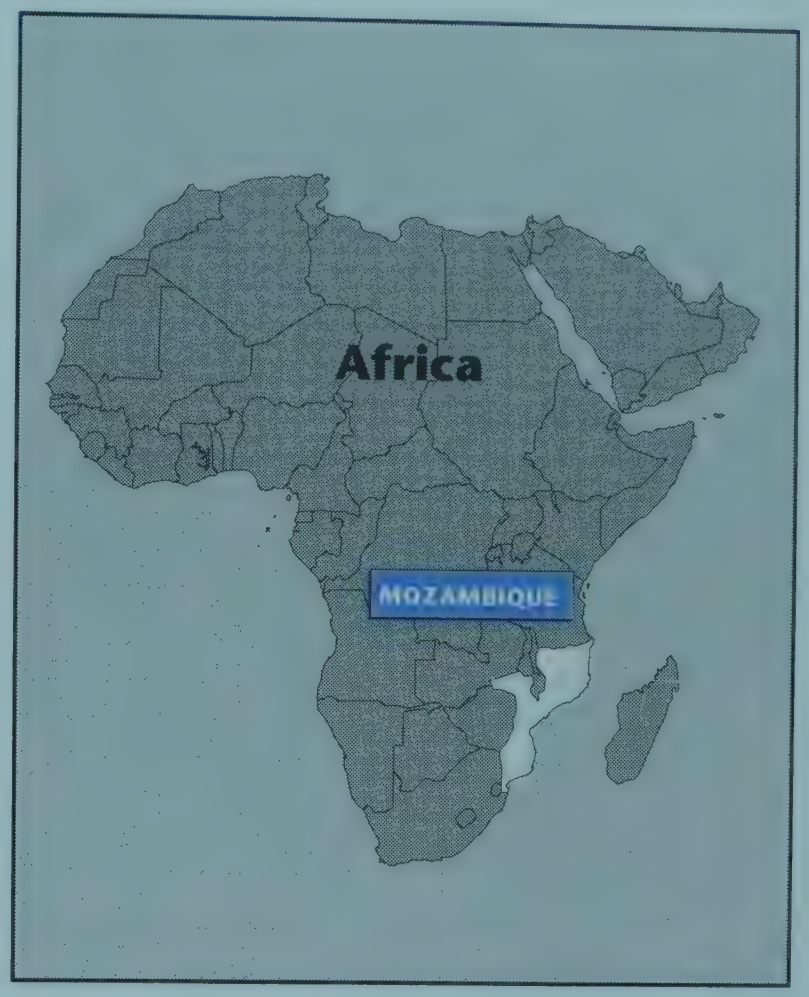
The Mozambique study illustrates what can be achieved in a country with scarce human, institutional and financial resources for health research, in spite of the adversities of on-going war.

The Philippines summary illustrates the importance of political will in support of research, and enumerates several success stories in the realm of research-policy-action linkages.

Thailand's paper provides an analysis of an experimental mechanism for linking policy and research and a thorough discussion of remaining challenges.

The Mexico report demonstrates how a steady build-up of research capacity has prepared the country to address its major health problems.

These countries have been chosen to illustrate the diversity as well as commonalities among developing-country ENHR efforts.



Mozambique

When it gained its independence from Portugal in 1975, Mozambique inherited a fundamentally urban-based, curatively oriented, predominantly private health system designed primarily to meet the needs of the colonial population. It also inherited one of the worst health manpower situations in the world: not one Mozambican researcher had been trained. This meant that not only were virtually all doctors located in the three main cities, which contained less than 10 percent of the population, but after liberation most health professionals left the country.

In the early 1980s, war began to have a devastating effect on both the economy and the health of the country. Under five mortality rates increased from below 180 to about 250–300 per 1,000 live births in some parts of the country. In some regions, nearly one quarter of children under five suffer severe acute malnutrition. With large sections of the population dislocated from productive activities and forced to live in overcrowded conditions as impoverished refugees, communicable diseases have become widespread. The recent epidemic of HIV (in Mozambique both HIV-I and HIV-II) has spread through this refugee population much more rapidly than it has infiltrated other groups, further heightening the crisis in health.

Due to economic changes, including a restructuring mandated by an IMF/World Bank agreement signed by Mozambique in 1987, the country's health research institutions have had to survive on more and more limited funds. This has meant the freezing of capital expenditures and the crippling of plans to establish competent, functional research capabilities.

Fortunately, in 1975 the health services had been nationalized and, despite extremely limited resources (human, material and financial), expanded, with priority placed on prevention and control strategies based on primary health care (PHC). The PHC orientation meant that a receptive environment was being fostered for the development of ENHR. Not only was the Ministry of Health (MOH) already interested in an applied health research focus, but the

PHC system generated demand for ENHR, with its integrated approach to research, training, and service.

The MOH has set a number of short-term goals for improving the health of the country:

- reducing infant and maternal mortality;
- controlling endemic infections and parasitic diseases;
- improving basic nutrition;
- providing emergency health services;
- improving the condition of refugees; and
- improving workers' health.

A number of health-research-related institutions of Mozambique have recognized that in order for such objectives to be achieved the country has to develop its own human and institutional capacity to accelerate and sustain health progress. What is presently lacking is a critical mass of capable and competent researchers in stable institutions which are able to address the central health problems of the country according to an ENHR strategy. Key players realized, on the one hand, that, given the condition of the country and its institutions, they couldn't create sustainable development based in a single institution; any ENHR effort would require a broadly interdisciplinary and multisectoral arrangement. On the other hand, they knew it was impractical to attempt to integrate all existing capacities in the country. So prime movers decided to focus their efforts in a few key institutions that would combine the academic sector and the public health research area.

Three principal institutions have entered into coalition to spearhead the Mozambican ENHR movement; they include:

What is presently lacking is a critical mass of capable and competent researchers in stable institutions which are able to address the central health problems of the country according to an ENHR strategy.

a) The National Institute of Health (INS), the public health research institute of Mozambique's Ministry of Health (MOH), has the mandate to provide technical and scientific assistance for disease control and prevention activities carried out by the National Health Service (NHS). At present, the INS undertakes both biomedical and social research on communicable diseases and traditional medicine; provides consultation and acts as a reference laboratory for the main communicable diseases; provides local training both within and outside the INS, teaching undergraduate students; and assists in endeavors to strengthen national research capabilties.

The INS's staff now comprises 32 researchers who collaborate increasingly with national disease control programs and interact with research institutions internationally. In addition, the MOH plans to develop the INS's capacity for other areas of research and monitoring, including environmental health, nutrition, demography, and quality of water, drugs, foods, etc. Since the INS's mandate already includes the strengthening of resources within the country, it has the potential for playing a major role in the development of ENHR capabilities.

b) The Faculty of Medicine, Universidade Eduardo Mondlane, which, despite an acute shortage of manpower, is performing well its primary task of teaching and is carrying out some research, though not necessarily all in high-priority areas.

The Community Health Department is one of the more fully staffed areas of the Faculty: it employs two full-time staff members, both physicians with master's degrees in public health from the London School of Hygiene and Tropical Medicine. This department takes medical students to the field to do baseline and epidemiologic survey work. The department is perhaps the best qualified to coordinate interdepartmental research activities within the medical school, as well as to develop and implement its own research programs.

c) The Regional Centre for Health Development (CRDS), run with the support of WHO and the governments of Mozambique and the other Portuguese-speaking African countries. Due to the nature of its mandate — to teach research methodology for a range of public health disciplines to both mid-level health workers and professionals — CRDS is well placed to participate in ENHR capacity building. In 1989, the Centre trained 32 Mozambicans in research methodology.

Because of the centralization of this early-stage ENHR consortium, the support of researchers and organizations in the peripheries of the country has become a matter of concern. In order to address this issue, INS recently formed a new foundation, Fundacao Mocambicana para a Investigacao Saude (FUMIS, Mozambican Foundation for Health Research), which will provide ENHR funds and support to young researchers, especially those in the periphery. FUMIS will provide consultancy, tutorial and supervision, as well as small grants (up to $5,000),

and organize workshops on research methodology for grant recipients. The board of FUMIS includes the National Directorate of Health, INS, CRDS, the represntatives of Faculty of Medicine, and other university departments of social and biological sciences. The foundation received a grant of $100,000 from DANIDA for two years, and expects to receive additional funds from the government and other agencies. Intended eventually to be an autonomous, long-term funding mechanism, FUMIS is in the process of being legally constituted and registered.

Mozambique recently received a grant from the International Development Research Centre of Canada (IDRC) for a 10-year program for strengthening its ENHR capabilities in primary health care. The project has been broken down into three phases: the first will permit Mozambique to begin forming a nucleus of research training capabilities to be located within the principal research/training institutions, as well as to clarify its definition of the country-specific context of ENHR and a plan for developing the necessary research capability; the second will involve the development of experience through the application of the skills and capabilities developed in the first phase; the final phase will focus on the application of training and experience gained in the first two phases to the development of research on key critical issues and the establishment of a core of trainers that can ensure the continued reproduction of ENHR workers.

In addition to this capacity-building program, other Mozambican ENHR initiatives are on-going. For instance, a long-term collaborative research program on malaria has been established between the NIH and the Statens Seruminstitut in Copenhagen, Denmark. The program aims at strengthening the capabilities required for epidemiological and biomedical research, through direct involvement in field research and through academic training leading to master's and PhD degrees. It includes sharing of protocols, transfers of technology, and joint publications.

The most immediate challenge for the Mozambican ENHR movement is to overcome the constraints caused by lack of funding. Although the current ENHR project will help resolve the problem of institution building, limited manpower remains a critical obstacle. Those engaged in ENHR efforts are now discussing ways to encourage the development of a core of professional research scientists and managers despite the country's inability to offer adequate financial remuneration. Possible solutions include a clearly-defined career structure, greater institutional autonomy with respect to fixing salary levels and

contracts, and the creation of a fund for scholarships for young researchers conducting local research.

The Philippines

With the vision of "Health for all Filipinos in the year 2000," the Philippine government, through the Ministry of Health (MOH), adopted the strategy of primary health care (PHC) in the early 1980s. Over 90,000 barangay health workers were trained, community health services mobilized, and the community itself encouraged to participate actively in health care. All these actions resulted in wider health care coverage. At the same time, the central office of the MOH delegated authority and delivery of services to the regional health offices. In addition, the integration of community health services and hospital services was completed at district and provincial levels. Emphasis was given to the five impact programs (Control of Tuberculosis, Malaria, Schistosomiasis, Diarrheal Diseases, and Expanded Program of Immunization) in order to ensure that the more pressing public health problems would be addressed. The economic crisis in the Philippines, which was manifested in negative growth of GNP in 1984–1985, had

COMMUNITY HEALTH CELL
326, V Main, I Block
Koramangala
Bangalore-560034
India
02020
COMM 300
N91

...ironically, reports from all over the country showed that performance was lowest in the cities.

a far-reaching and long-term effect on the health of Filipinos. Overall health status declined and there remained a vast gap between health needs and available health services.

The February 1986 (People Power) Revolution awakened the dormant consciousness of a long-suffering people. With it began a series of changes that transformed the people's attitude from indifference to awareness. Taking the lead in the changing focus was the new President of the republic, supported by leaders of various sectors. In the health sector, the commitment of the new Secretary of Health to professionalism, merit, people-oriented values and drive for perfection served as the ideal. "Above all, serve the people" became the battle cry in the Department of Health (DOH).

As these changes in health care delivery were unfolding, health research took on new meaning and importance. Health researchers and policy makers started an active process of consultation and collaboration which resulted in relevant health research and eventually influenced policy making and implementation of health programs. The impact of this close collaboration on the improvement of the health status of the majority convinced key people that a successful health care delivery system could be made possible through the active orchestration of a national health research effort.

For example, the Philippines was among the first countries to launch a national diarrheal disease control program which capitalized upon the results of a wide range of research projects (see box under Element Three). In 1989, in response to widespread public concern, the DOH announced a national Hepatitis B Control Program which was based on relevant research findings communicated across multisectoral links among researchers, program managers, and policy makers (see box in Chapter One).

Communication Campaign for EPI

The Expanded Program on Immunization (EPI), which was launched in 1976, seeks to raise the percentage of fully immunized children less than a year old from 25 percent in 1985 to 90 percent by 1993. Further, it seeks to increase the number of pregnant women with tetanus toxoid immunization from 37 percent in 1988 to 80 percent by 1993. Three main factors are helping to ensure the success of this campaign:

(1) the adoption of a new decision-making approach to planning, design, implementation and evaluation of the EPI campaign;
(2) strong political support and decisive policy making which mandated the implementation of a Nationwide Immunization Day; and
(3) a strong service delivery infrastructure further enhanced by an integrated communication campaign.

Three national evaluations of the EPI undertaken in 1978, 1982, and 1986 by the National Immunization Office of the DOH showed that low coverage and high dropout rates resulted in the full immunization of only one-fifth of the target population, while three-fourths of the target population remained vulnerable to the six preventable EPI diseases: tuberculosis, diphtheria, pertussis, tetanus neonatorum, poliomyelitis, and measles. The remaining population was partially immunized, and therefore remained susceptible to some of these diseases. This setback was due to a consistent gap between provincial and city averages for fully immunized children in 1987, 1988, and 1989: ironically, reports from all over the country showed that performance was lowest in the cities. During that time, the Department of Health, although responsible for providing vaccination services nationwide, had no administrative control over city health offices. Therefore, in order to reach a number of targeted city children, the DOH launched an integrated social marketing campaign to increase the rate of full immunization among children less than a year old. The campaign was designed to stimulate demand for measles immunization among mothers of children in the target age groups through multi-media messages which discussed the dangers of measles and the use of immunization to prevent it. As mothers entered the health delivery system for measles vaccination, their children also received immunization for the other vaccine-preventable diseases.

Prior to the campaign, intensive client research was conducted by professional experts in mass communication to serve as the basis for multi-media messages presented by the Secretary of Health and media personalities. Campaign materials depicted mothers as responsible for preventing measles infection among their children through timely vaccination and recognition that measles could lead to serious complications. A pilot test campaign conducted in the National Capital Region made use of (1) a single immunization day, (2) sales conferences where field health personnel were oriented to the campaign, and (3) sufficient logistical arrangements to handle the influx of mothers with children to be vaccinated.

A post-campaign study showed a significant increase in general knowledge about immunization among the targeted mothers. There was a 50 percent increase in expressed confidence in immunization for disease prevention. Full immunization coverage reached 90 percent in 1990.

Control of Acute Respiratory Infection (CARI) Program

It has long been recognized that Acute Respiratory Infection (ARI), especially pneumonia, is a major cause of death and illness in the Philippines. In order to develop a rational program for its prevention and control, the Research Institute for Tropical Medicine (RITM) of the DOH undertook studies which showed that:

1) Morbidity and mortality figures varied between rural and urban settings.
2) Those likely to die were the very young, the malnourished, and those stricken with measles.
3) Many of the deaths were recorded in peripheral areas where the only health personnel available were the volunteer barangay health workers.
4) Early signs of a serious illness were not recognized by mothers or caretakers, so appropriate referral and treatment were delayed.
5) When medical treatment was finally given, it was usually in the form of either cough syrups, which were useless for this condition, or some expensive or inappropriate antibiotics.
6) The most common bacterial causes of pneumonia were organisms that respond to inexpensive antibacterials recommended by WHO.

These findings were used to test a control program based on a WHO model but adapted to local conditions. This project, which was carried out in both rural and urban settings, brought about the:

1) Development of training materials adapted to local conditions and addressing different levels of health workers.
2) Training of mothers for early detection of major illness and of barangay health workers to dispense appropriate antibacterials in peripheral communities.
3) Decrease in use of inappropriate medications in the home and in health facilities.
4) Use of existing DOH systems and resources in training, supervision and implementation.
5) Identification of the methods of training health workers which were also useful in promoting among mothers and other guardians supportive treatment using indigenous technology such as herbal medicines, proper hydration and nutrition.
6) Active participation of medical professionals who recognized the importance of a team approach.

In addition, the program promoted some of the concerns of the National Drug Policy — in particular, the rational use of medications, from which the CARI program stands to benefit.

The CARI program was conceptualized largely through the united efforts of various sectors in the DOH, which collaborated to study questions related to service delivery. The interest and commitment of top management allowed what would otherwise have remained a collection of interesting findings to be used in the organization of a national program. Its further evolution will likewise depend on operational lessons to be generated by on-going and planned implementation research involving policy makers and implementors.

Growing concern about the rising cost of drugs prompted a series of consultations and research projects.

National Drug Policy

To ensure that Filipinos will have ready access to safe, effective and essential drugs at affordable prices, President Corazon C. Aquino launched the National Drug Policy (NDP) in April 1987. This policy was formulated by the DOH as a result of studies which identified and analyzed key problems in the pharmaceutical field. The National Drug Policy rests on four pillars that form an integral unit:

(1) Quality assurance of drugs;
(2) Rational use of drugs by health professionals and consumers;
(3) Self-reliance and self-sufficiency in pharmaceuticals; and
(4) Targeted drug procurement by government in support of the first three pillars.

Growing concern about the rising cost of drugs prompted a series of consultations and research projects. A comprehensive approach to the problem was evolved in order to address the twin roles of the DOH as a consumer of drugs and as a regulator of the pharmaceutical industry.

A Task Force was formed to study the components of the problem through a series of consultations, workshops, and seminars with various affected and concerned groups in the Philippines. Consulta-

tions with international agencies such as WHO and the United Nations Industrial Development Organization (UNIDO), as well as site visits to different countries in Asia, served to highlight pertinent lessons from other countries on national drug policy formulation.

The four pillars of the National Drug Policy eventually emerged from this intense study and deliberation. The programs created to uphold the pillars have led to the strengthening of the Bureau of Food and Drugs (the regulatory body of the department for assurance of quality drugs); the enactment of the Generic Law which laid the foundation for rational use of drugs; streamlining of the DOH drug procurement process; and a study funded by UNIDO on how the country could become self-sufficient in essential drugs. This study led to the formation of a Health Product Development Group to lay the foundation for the local manufacture of health products. Beyond its obvious health implications, the Generic Law empowered the consumer by offering the option of affordable, generic medicine. Thus, what started as targeted health research on mechanisms to provide more drugs to clients from the limited resources available ultimately led to a landmark policy that promotes social equity and national development.

If the National Drug Policy has been carefully designed and successfully carried out by various sectors of the country, it is because the Secretary of Health was solidly behind the project from the beginning. The strong and directed political will evident in the support of the President of the Philippines and of Congress, which enacted the Generic Law, was crucial to its success. Secretary of Health Bengzon recently won the prestigious Ramon Macsaysay Award for his contribution to the establishment of the National Drug Policy.

All of these successful research projects served to dramatize the need for a well-thought-out research policy and an agenda for setting priorities, coordinating efforts, and using research output. All of these functions are the core of the ENHR strategy which the DOH embraced at the February 1990 Nobel Conference.

One of the crucial factors brought out in these successful programs is the collaboration between the DOH and various other institutions. While the DOH plays the major role in the health care delivery, other government agencies and private institutions make important contributions to the provision of health services. Furthermore, other sectors such as agriculture, housing, supply of potable water and traffic management, affect the health status of the people. However, health programs would be more cost-effective and efficient if there were coordination and cooperation among various agencies, both public and private, in implementing the programs.

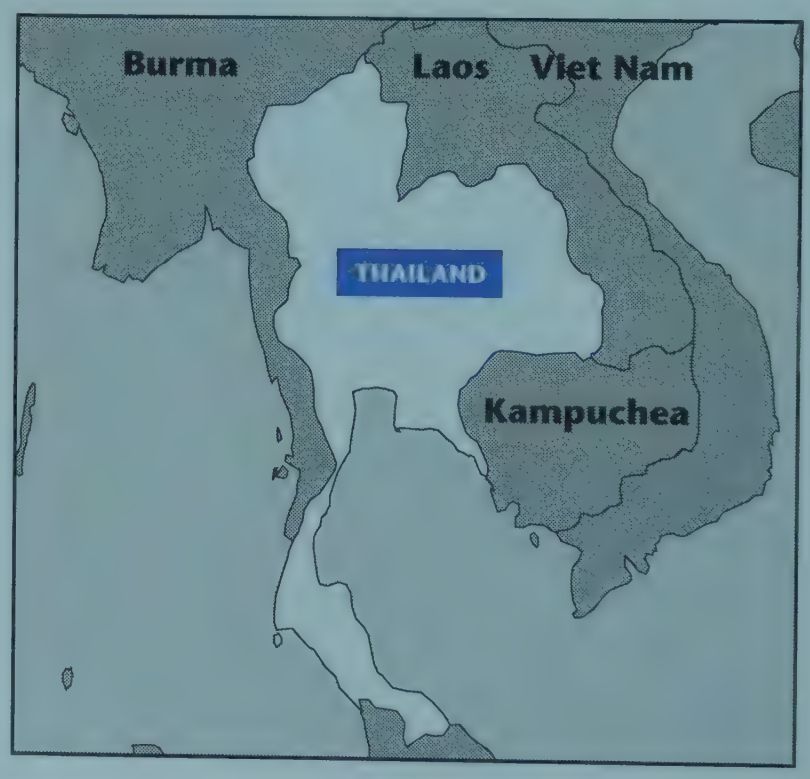
While some close working relationships have already been established among institutions and sectors in the Philippines (see box under Element Five) and a computer-based information system links the country's health community to international information systems, strengthening all such linkages can only accelerate the use of research results to improve health care delivery.

The effort of the DOH's newly created Office on ENHR (see box under Element Two) is directed at improving the health status of all through the attainment of equitable distribution of health services and benefits. This will be made possible only by the adoption of national health policies and programs based on action-oriented research.

Thailand

Before the ENHR Movement

The most important critical gaps in Thailand prior to the introduction of ENHR were the lack of demand for research among decision makers at all levels and the lack of policy orientation among researchers. Several efforts were launched through national bodies to promote the use of scientific knowledge for health-related decision making: e.g., through the National Research Council of Thailand, the National Economic and Social Development Board, the Medical Council, the Research Committee of the Ministry of Public Health and the Center for Coordination in Medicine and Health. Some direct efforts have been made at the personal level ("borrowing" of expertise, committees, working



groups, consultants, workshops and brainstorming sessions) as well as at the program level (e.g., primary health care and family planning).

The idea of a national advisory board which fosters the necessary conditions for undertaking high-priority public health research was born in 1972 when Dr. Scott B. Halstead, working as a WHO consultant to the Ministry of Public Health (MOPH) in Thailand, helped to create an epidemiology division. The idea was actualized in 1985 when Dr. Prayura Kunasol became Division Director and Dr. Halstead joined the Rockefeller Foundation. Essential leadership in steering the National Epidemiology Board of Thailand (NEBT) into existence was provided by Dr. Prawase Wasi, first president of the NEBT, and Dr. Theodore Woodward, president of the Armed Forces Epidemiology Board, USA. The functions of the NEBT proposed to the Rockefeller Foundation included: identifying the priority health problems in Thailand, announcing requests for proposals, selecting appropriate projects and research activities, allocating resources, and acting upon the final results and recommendations.

The NEBT was established by the Thai government and works closely with it but manages to avoid governmental bureaucracy. At this stage, financial support from the Rockefeller Foundation enables it to operate in a flexible way. It is hoped that the Board's success will show the government what kind of budgetary management mechanism is necessary for national health research promotion, and that the freedom of the NEBT will carry over into other research coordinating structures.

The ENHR Movement

In 1990, the NEBT adopted the ENHR mandate, and several key elements guided NEBT activities toward implementation of an ENHR strategy.

1. *The visions of several academic leaders* in the country were crucial.

2. *A critical mass of multidisciplinary capacities already existed in the country* due to programs such as the Institute of Tropical Medicine, the Field Epidemiology Training Program (the FETP) and the International Clinical Epidemiology Network (INCLEN). Existing capacities also included researchers in non-health-related fields. These combined forces enabled Thailand to begin working toward ENHR immediately after prime movers had been assembled.

3. Members of the NEBT and its committees had been recruited from several government bodies, including the MOPH, as well as from the universities, in order to promote *inclusiveness, independence and access to important data.* These workers do not yet represent all important health partners in the country, but they benefit from freedom of expression without any bureaucratic pressure.

4. Equally important were mechanisms such as the joint secretariat and special programs which can *tackle the "hot issues" perceived by the administrators and/or the public.*

The most important critical gaps in Thailand prior to the introduction of ENHR were the lack of demand for research among decision makers at all levels and the lack of policy orientation among researchers.

5. One important asset was the existence of *personnel* with what the fledgling Thai ENHR movement called the "right soul." Workers in the NEBT were committed and dedicated, putting national interests before self-interest.

6. Another key element was the existence of a *peer review mechanism.* The work of the NEB and its technical committees was subjected to peer review, whereby many leaders with vision gave excellent critical assessments of the activities and performance of the NEBT.

7. A final critical element was having *a few professional experts* working full-time at the core to provide academic leadership and management.

The NEBT has undergone various phases of restructuring in response to changing situations (see description under Element Two), but an appropriate system for priority setting has already been designed and is being implemented by the most recent structure (see description under Element Three). Review papers and research projects are also subjected to critical reviews to decide on appropriate channels for further actions. Finally, the NEBT has established linkages with other sectors of the government to facilitate the eventual translation of research results into policy and action.

Achievements to date

1. *Policy recommendations for disease control:* Many policies and strategies advocated by the NEBT for disease control have already been adopted by the government. These include: nationwide vaccination against Japanese encephalitis in the provinces in the

Despite all this laudable progress, many possible pitfalls have been identified through the review mechanisms.

North; withdrawal of Injectable Typhoid Vaccines from the National EPI Program; modification of national strategies in the control of iodine deficiency disease; and formulation of an Environmental Health Program in the 7th National Health Development Plan (1991–1996).

2. *Strengthening of linkages between MOPH and academic institutions:* The mechanisms for reinforcing these relationships include: the creation of Board of Trustees and NEB meetings for higher policy-making- and administrative-level personnel; the establishment of Technical Commissions for the four main programs; the use of ad-hoc committees, expert groups or scientific working groups formed by various commissions.

3. *Reorientation of researchers and experts:* Projects include: a review of existing and appropriate technology for mosquito control, especially of community-based technology; a review of non-communicable diseases in Thailand; the control of diabetes mellitus emphasizing patient behaviors and the work of service organizations; and research on hypertension in the community.

4. *Prioritization of health problems:* In 1987, the NEBT oversaw the production of a book entitled "Review of the Health Situation in Thailand: Priority Ranking of Diseases." The second edition is currently being revised. The book complements the review of various aspects of health issues presented at the first Thai Health Assembly.

Challenges ahead

Despite all this laudable progress, many possible pitfalls have been identified through the review mechanisms. These include:

1. *Scientific Validity:* The fact that the NEBT has involved "the best scientists" in the country does not mean that the best is good enough. Many times the peer reviewers were too complacent because they did not want to hurt friends or colleagues; other potential reviewers declined to participate in the peer review at all for similar reasons. Some researchers and reviewers were unduly defensive when receiving criticism. In addition, it was felt that many conclusions of researchers and reviewers did not follow from the data obtained but were rather "molded" to correspond to WHO recommendations or existing theoretical frameworks. For all these reasons, it seems that during the initial stages of the ENHR program, a mechanism for comprehensive review by peers from outside the country might be added to the existing mechanism.

Information for prioritization was mainly derived through the health services system, a limitation that may have skewed the perception of priorities. For example, misuse of drugs was not listed among the priority health problems because routine data were not available in the health services system, even though over 10 billion bahts are spent annually on drugs and the country has over 26,000 preparations of registered drugs.

2. *Research priority setting — problem- or researcher-oriented?:* Prioritization criteria are usually not objective enough, and priorities are in danger of centering around existing researchers' specialties rather than primary health problems. For example, because there are no basic scientists among the key actors of the NEBT or the various commissions, issues such as how basic scientists can help reduce the national dependency on foreign drugs have never been addressed.

The NEBT must take measures to guard against any possible partiality to NEBT or commission researchers, particularly in the dissemination of information on funding opportunities and in the allocation of funds.

3. *Inclusiveness — composition of the "experts":* Most experts in the NEBT and the Technical Committees are physicians; only recently have some economists and social scientists become involved. The full potential of existing resources in the country has yet to be exploited.

If possible, experts from the peripheral provinces should be recruited for the technical component of the NEB so that the ENHR mechanism can be extended to outlying areas. In general, ENHR activities need to be decentralized to various levels of the health care system.

4. *ENHR mechanism — participation, cooperation and coordination:* A balance has yet to be struck between full participation and simple cooperation by the parties to ENHR activities. The former implies involvement in problem sensing, identification of decision options, actual decisions, evaluation and dealing with the consequences of success or failure. Cooperation implies that those who are not the key actors in the NEBT become involved only when their expertise is needed. Some potential participants have complained that the objectives and targets of

cooperation have not been made clear to all parties; many researchers feel that the mechanisms for appropriate credit sharing have not been carefully considered; and because of these reservations, some researchers have declined to become actively involved in NEBT activities.

5. *Capacity strengthening:* Mechanisms for building, strengthening and retaining the necessary complement of "national" scientists have yet to be created. The NEBT should aim to improve the research environment, career structures and the physical environment for ENHR. More work is needed to improve research management so that scientists of various disciplines can understand and work together as a team. It should also be emphasized that the half-life of country-specific research results will become shorter as society changes more rapidly. Therefore, one focus of the NEBT should be the generation of not only new but also sustainable knowledge.

6. *From research to equity in development:* The ENHR strategy stresses the importance of research as a link to development. Development implies change for the better. With dramatic changes in technology, disease patterns, population structures, socio-economic environments, politics, and people's expectations, the need for positive influence on all these factors has become more pronounced. In its efforts at prioritization and resource allocation, ENHR will have to deal with the political process. There is a tendency to be cautious in both the political and the research environments — risk taking is not a normal behavior. Evolution appears more attractive than revolutionary change because it is harder to single out people to blame when such gradual change goes wrong. But development through changes in both ideas and structures will be inevitable, and relationships with government and the general public will become ever more strained unless researchers live up to expectations.

Because the readiness of countries to pursue ENHR is crucial, the NEBT should constantly review its mission, mandate, partners, strengths, weaknesses, opportunities and threats in order to strike a balance between two possible perceptions: that it is the "central" mechanism of ENHR in Thailand and that it cooperates with other mechanisms at both national and direct individual levels. The first perception may be counter-productive to the kind of integrated efforts called for by ENHR. In practice, the NEBT needs to embrace both alternatives to some extent: it must act as a center in order to lead the way to development, and it must remain open to the contributions of others in order to achieve new solutions using alternative strategies.

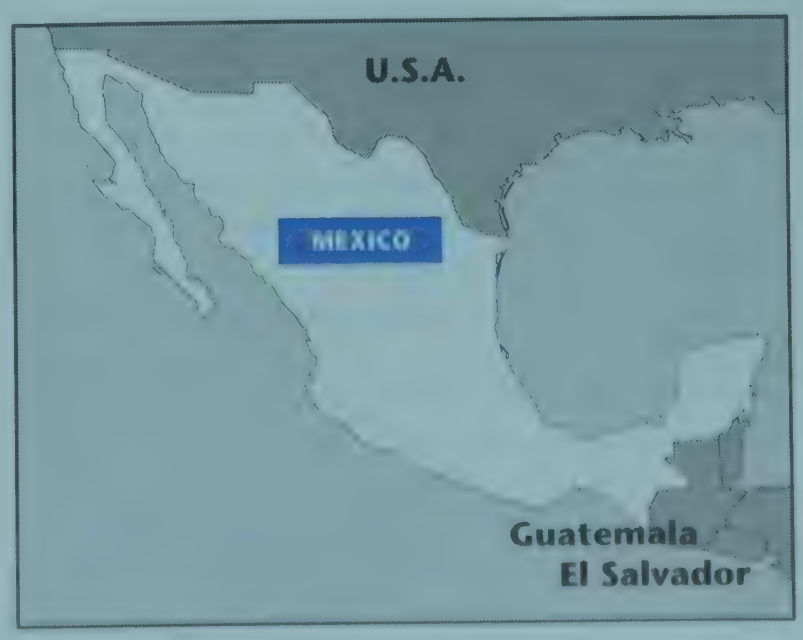
7. *Finance and sustainability:* Finally, one of the key challenges is sustainability. The support of the Rockefeller Foundation to the NEBT will eventually end. The NEBT has met with the Minister of Public Health and recommended that he allot one percent of the MOPH budget to the support of NGOs working in health, including the NEBT. The Division of Health Planning has put this item in the budget list for next year. Although the portion of this amount that will be dedicated to research is still at issue, this is a positive step toward convincing the Thai government to earmark 2 percent of its health budget for ENHR research.

The power to ensure sustainability lies in part in the effective national networking of research groups, MOPH, universities, and representatives from donor agencies. However, in the final analysis, the real power will derive from the ENHR movement's ability to respond to the real needs of the people. The question of sustainability will be resolved only when all partners in health see that ENHR has accelerated progress toward the fundamental goal of equity in health and not only served as a song that birds of the same feather like to sing and hear.

Mexico

Mexico has a population of 81.1 million, and a density of 41.3 people per square kilometer. While 70 percent of the population lives in urban areas, there are approximately 110,000 small communities with less than 500 habitants. According to the World Bank, Mexico is a "middle-income country" with a mean annual income of US$ 2,300, but, as is generally known, Mexico continues to be characterized by great socio-economic disparity among zones and population groups.

The Mexican epidemiological transition has been described as "protracted" and "polarized," mainly



For many years, health-related research has been one of the areas of greatest development in all the sciences in Mexico.

because of the coexistence of health problems representing different stages of the transition—i.e., infections and malnutrition side by side with chronic and degenerative diseases.

Health is a high priority of the Mexican government, and since 1986 health care has been designated as a constitutional right. In order to operationalize this right, Mexico has formed a National Health System (NHS). The system includes the public health sector, which is made up of several different social security insurance institutions, private care facilities, and various organizations at the federal and state levels which offer low-cost health services to the non-insured population. The Ministry of Health is in charge of coordinating the whole system.

While the contribution of Mexican scientists to medical knowledge has been significant, most of the research has been undertaken with scarce resources. Mexico allocates less than 0.4 percent of its Gross National Product to research activities; about one-quarter of this goes to health research. From all perspectives, funds for health-related research are insufficient. According to the National Survey of Health Research which covered the period between January 1983 and August 1984, 5,582 health-related research projects were carried out in Mexico. About 39 percent of them were related to biomedical problems, 51 percent to clinical research, and only 10 percent to public health studies.

Mexican professionals have contributed most to research in the biomedical field, and many of these projects have had an outstanding record of excellence and international impact. In the period between 1960 and 1988, 27 institutions for biomedical research were created. Interinstitutional collaboration is frequent and the linkage between research and postgraduate education has improved the quality and quantity of students. Nevertheless, productivity, as measured by the total number of projects, is not yet adequate.

Clinical research in Mexico is usually undertaken by physicians in medical care facilities, and most of these studies refer to small groups of patients. While clinical research appears to be the type most frequently undertaken in Mexico, it is the area with the lowest number of full-time researchers. Generally, the methodological quality of clinical research in Mexico has not been good. On the other hand, there are some specific areas which have been studied by excellent research groups: cardiology, pediatrics, neurology, psychiatry, perinatology, nutrition, internal medicine, oncology, and pneumology.

But, given that less than 10 percent of the total health research projects carried out in Mexico deal with public health problems, serious efforts have been made since the 1970s to strengthen public health research, through the creation of new graduate programs and centers (see description in Element Four).

National Institutes of Health (NIH)

The era of scientific and technological progress has been evident in Mexico since the 1930s, when the first public institution for specialized medical care was established. In the following decade four more hospitals of this kind were inaugurated. These five facilities are now known as the National Institute for Respiratory Diseases (1936), Children's Hospital (1943), National Institute of Cardiology (1944), National Institute of Nutrition (1946), and National Cancer Institute (1946). In 1952, the National Institute of Neurology and Neurosurgery was added to the system. Two decades later, three other institutes were established: the National Pediatrics Institute (1970), National Perinatology Care Institute (1977), and Mexican Institute of Psychiatry (1979). Finally, in 1987, the National Public Health Institute was added to NIH (see below).

The system of 10 institutes has been defined as a homogeneous group of quasi-governmental, decentralized organizations with a legal base and separate funding status, whose essential activities are specialized medical and surgical care for the non-insured population and training in health research in the corresponding areas. All share a strong interest in scientific research, and in the period from 1984 to 1987, the NIH was responsible for 25 percent of all health-related articles produced in institutions in Mexico City and registered in the data bank Medline/Index Medicus.

National Council of Science and Technology (NCST)

For many years, health-related research has been one of the areas of greatest development in all the sciences in Mexico. In the 1980s the NCST gave a further impulse to the field of health with three new large-scale programs: "Nutrition and Health," "Support for Research Excellence," and "Special Grants."

From 1985 to 1987, NCST financed 309 projects in the "Nutrition and Health" program. Thirty-three percent of the projects were carried out in the Ministry of Health, and most of these corresponded

to the NIH. The National Autonomous University of Mexico was responsible for 62 projects, and 74 were carried out in state universities. The National Polytechnical Institute had 23 projects, and the Mexican Institute of Social Security had 30. Among the areas which received more grants were epidemiological research, study of the determinants and indicators of the quality of foods and nutrition in Mexico, work to strengthen basic medical research, reproductive biology research, and study of the risk factors in communicable diseases.

In the "Support for Research Excellence" program, 91 projects were given grants in the same three-year period. All the projects dealt with topics in the basic biomedical sciences, and 74 percent went to institutions in the Federal District. In the same period of time in the "Special Grants" program, NCST financed 369 activities. These grants covered scientific prizes; participation in academic events; organization of such events; publishing of journals and magazines; improvements in library services; and sponsoring of visits and repatriations. Among the topics which received more financing in the same years were: amoebiasis, cistercercosis, diarrheas, early detection of childhood malnutrition, programs of food enrichment for children and special diets, endocrinology and human reproduction, national seroepidemiological survey, contraceptive practice in Mexico, lead poisoning, rheumatic diseases, pathology and treatment of liver cirrhosis, alcohol consumption and related factors, and fetal tissue transplants to the brain.

New Focus on Epidemiology

Mexico has had a long tradition in public health work that dates from the third decade of this century. While the field of epidemiology has always been a part of this tradition, the types of studies which were done until quite recently were generally related to description of local situations and referred almost exclusively to communicable diseases. One obstacle to growth in the area of epidemiological studies has been the lack of personnel trained at the master's and doctoral levels; another was the limited budgets available for epidemiological research, a situation which affected the number of posts available and the possibilities for projects with a more ambitious scope. In the past decade the former limitations which affected the quantity and quality of epidemiological research have been reduced, and it is hoped that the declared national interest will lead to a new tradition of epidemiological excellence in Mexico.

In a review concerning this topic, Sepulveda and Lezana analyzed some of the activities which point to a new scope and depth in this field. An example of the more recent type of epidemiologic studies in Mexico concerns a randomized trial of two types of measles vaccines in infants. The study showed that the seroconversion rate for high and medium doses of Edmonston-Zagreb vaccine was equally or more effective (96 to 98%) in six-month-olds than a standard dose of Schwartz vaccine in nine-month-olds (87%), and that clinical adverse reactions were not observed. On the basis of these results, the report concluded that younger infants can safely achieve high levels of measles immunity with Edmonston-Zagreb vaccine.

Another example of the new epidemiology focus in Mexico is a System of National Health Surveys which was begun in 1985. This program consists of a set of actions which produce information about health-related conditions at the level of the family dwelling unit, and which use a large sample that is representative at both national and regional levels. The sampling frame is made up of 450,000 household units identified in 1986 and 1987. It includes both urban and rural population and covers different socioeconomic levels. Among the areas covered by these studies are general national health (1985), diarrheas in infants and preschool children (1985), use of oral rehydration salts therapy (1985), drug abuse and addictions (1988), and the nutritional status of small children and women of reproductive age (1988).

Another important step toward a new era was the creation in 1989 of the Advisory Board of Epidemiology (ABE), an independent, multidisciplinary organization of researchers. This group advises the Ministry of Health with regard to policy and programs for disease prevention and health promotion. An ABE subcommittee has been designated as a task force to write a full report on the health status of Mexico; this document will soon be presented to the highest public health authorities. The ABE has also chosen priority areas for national epidemiological research: communicable diseases; chronic and degenerative diseases; abuse of alcohol, tobacco and drugs; environmental health; reproductive health; and quality of care.

Mexico has had a long tradition in public health work that dates from the third decade of this century.

National Institute of Public Health (NIPH)

The National Institute of Public Health (NIPH), another recent initiative, was founded in Mexico City in 1987, through the merger of three academic organizations of the Ministry of Health: the School

of Public Health of Mexico; the Center for Research on Infectious Diseases, and the Center for Public Health Research. In 1990 the NIPH moved to its new headquarters, specially built for it in the city of Cuernavaca, Morelos.

The mission of the NIPH is to contribute to the improvement of the health levels of the Mexican population by means of the production, reproduction, dissemination, and utilization of scientific knowledge. To this end, it combines several dimensions: the objects of study represented by health conditions and the responses to these conditions; the biomedical, social, and behavioral disciplines; the fundamental activities represented by research, higher education, and service; and the scientific excellence of the projects and their relevance to decision making. The NIPH has defined nine priority lines of health research: epidemiologic transition, environmental and occupational health, women's and children's health, primary health care, quality of health care, human resources for health, resource allocation in health, host-parasite relationships, and population dymanics of infectious diseases.

The qualitative consolidation that the Institute is undergoing demands moderate growth in the number of direct research projects, of which there were 60 in 1990 and will be 63 in 1991. Forty-two projects were begun in previous years and continued in 1991, while the remainder are just beginning. There are eight new projects on academic development and extension and 14 related to the dissemination of research findings.

University Program for Health Research (UPHR)

The National Autonomous University of Mexico created the University Program for Clinical Research in 1981, and in 1988 the focus of its work was extended and the name changed to University Program for Health Research (UPHR). This program is a permanent link between the National University and the public health sector for the planning and implementation of health research.

UPHR has two main schemes for achieving its objectives, the first of which is made up of University Research Units started in 1984. These units bring together university faculty and students with professionals in corresponding areas in health institutions. Seven units have been established in the Secretary of Health, and six in the Mexican Social Security Institute. This second scheme is based on interinstitutional research projects. Among the themes that are being covered in theses projects are: development of steroid contraceptives, aberrations in sexual development, autoimmune diseases, tuberculosis immunology, chronobiology of leukemia, and automatization of clinical research units. The UPHR is also involved in human resource development and documentation of national health research.

Perspectives for ENHR

1. Mexican Commission on Health Research (COMISA)

COMISA is hosted by the Mexican Academy of Medicine. Its first plenary meeting took place in October, 1990. At that time COMISA members agreed that their main objective was to encourage the development of research in all scientific and technical disciplines that can contribute to the improvement of health in Mexico. (see box 2.8) In the next few months, the COMISA will form interdisciplinary groups representing biomedicine, clinical sciences, public health, health service research, and social sciences. It will also be creating a number of ad hoc working groups. Before the end of 1991, these working groups will be brought together to design a priority proposal for problem oriented health research in Mexico. Once this proposal has been reviewed by the Mexican Academy of Medicine, it will be sent to international organizations for financial support.

2. Other proposals

In some other countries and in a few areas in Mexico, "community laboratories" have successfully linked various disciplines in research efforts around specific health problems. The creation of such settings is probably one of the most effective ways of promoting ENHR, and the creation of a number of this kind of research facilities would be an important step in strengthening ENHR in Mexico. Several academic and governmental organizations are now preparing proposals for the establishment of international and interdisciplinary "community laboratories."

Furthermore, many health problems require human and material resources that cannot be found in a single country. There is need for a comprehensive approach to health research which calls for the use of resources at the regional level. Regional consortia made up of a number of health research centers in several countries could be effective in bringing together people and know-how around specific problems. Mexico has highly qualified researchers who are interested in participating in a consortium which would offer regional training and consultancy on priority health problems affecting Mexico and other Latin American countries. Institutional proposals for the organization of health research consortia are now being discussed.

Chapter Four: Challenges Ahead

"Health should not be seen only as an objective of development. What has not been sufficiently recognized is that good health is a positive force driving development. Health is more than a consumer item; investing in health increases the human capital of a society. And, unlike roads and bridges, whose investment value dwindles as they deteriorate over time, the returns on health investments can generate high social returns for a lifetime and well into the next generation."

Research is key to health and human development in developing countries. ENHR is a strategy for using a new mode of operation in the promotion of health research. National ENHR movements should be shaped by on-going interaction among the various partners in health; should be driven by a common determination to define and address the most important health problems that burden the country; and should include the seven elements that have been discussed above: promotion and advocacy; a national ENHR mechanism; priority setting; capacity building; networking; broadening the financial resource base for health research; and evaluating progress.

Because developing countries are so diverse, the challenge for each country is to be able to respond to the real needs of its own people. The national ENHR plan must be creative, well adapted to local circumstances, and sustainable.

"The question of sustainability will [be resolved] only when [partners] see that ENHR has accelerated progress toward the fundamental goal of equity in health and not only served as a song that birds of the same feather like to sing and hear." — Chitr Sitthi-amorn, Thailand

Each element comes with its own peculiar challenges: promotion and advocacy for ENHR requires continuing commitment; the national ENHR mechanism has to prove durable and sustainable; priorities must be credible and acceptable; capacity building requires constant growth and consolidation; networking demands the expansion of meaningful information, interaction and integration; financing must be consistent; and evaluation of the ENHR process must be objective and systematic.

By linking research, policy and action more closely, ENHR poses complex problems, and there is no blueprint for dealing with them. How can the delicate balance between researchers' independence and their need to respond to national priorities be maintained? How can one ensure that the political process involved in defining priorities is democratic? How can the reliability and inclusiveness of the information base be improved? How can power struggles among individuals and institutions in the country be minimized? How can peer review systems be established? How can bureaucracy be reduced to a minimum? How can the donor's control over the research agenda be reduced, even as the country continues to depend on external funding for research? What are the best schemes for developing research capacity?

The challenge for each country is to find the best answers to these questions within its own national context. The most pressing needs will differ from country to country, and so will the solutions. In all countries, however, in its efforts at prioritization and resource allocation, ENHR will have to deal with the political process (see box 4.1). The ability to reach a consensus among the various partners in health implies that there is a democratic decision-making system in operation.

Bringing research closer to the political process also carries implications for the autonomy of researchers. A balance must be established between researchers' creativity and their need to respond to national priorities. It is fundamental to ensure some degree of independence — and sometimes dissidence — of researchers in each country, since the independent pursuit of research can lead to important breakthroughs in the social and physical sciences, and make essential contributions to health and development. Since many

ENHR requires a change in emotional commitment, as much as it requires a change in mindset, in order to succeed.

researchers work within institutions, such problems should be solved at organizational level, rather than by individuals.

ENHR requires a change in emotional commitment, as much as it requires a change in mindset, in order to succeed. Exchange among the various health partners requires mutual respect and a common goal — to reduce the burden of health problems and improve the quality of life of all the people in the country, with a particular concern for the most vulnerable groups.

Success stories and progress already made by several countries demonstrate that obstacles can be overcome, and that ENHR can be implemented. A number of developing countries already have the commitment and the willingness, and they know the urgency of promoting and establishing ENHR. More importantly for other countries, they are interested in sharing their experiences and their visions of the future, and showing the way to countries that have not yet begun ENHR efforts. (See box 4.2)

The challenge for industrialized countries is to strengthen and sustain international solidarity in support of national ENHR movements. The worldwide ENHR movement is of great significance, but is still in its infancy and requires nutrition, protection and continuous stimulation. Those involved in ENHR internationally hold out great hope that the fledgling movement being fostered by developing and developed countries alike will live a long and prosperous life for the benefit of humankind.

BOX 4.1

The Politics of Health Research in Brazil

The recent history of FIOCRUZ demonstrates the importance of the commitment of the national government as well as the devastating consequences of the withdrawal of national support for research institutions. FIOCRUZ has had uneven evolution as a consequence of changes in governmental policies, and has experienced alternate phases of expansion and decline. In the 1960s and early '70s, during military rule in Brazil, FIOCRUZ suffered a clear decline as a consequence of governmental intervention in its scientific and technological activities.

In 1970, 10 outstanding Manguinhos scientists had their political rights revoked by the Brazilian government — the so-called "Manguinhos Massacre." Forbidden to work in their country, these scientists and several of their colleagues went to American and European universities, institutes and laboratories where they could start a new life and continue their careers. In Manguinhos they left abruptly-interrupted research projects, closed laboratories, and aborted cooperative programs. This intervention resulted in a significant brain drain in some of FIOCRUZ's strategic areas of focus.

The meningitis epidemics that hit Brazil in the early '70s showed the Brazilian government that the country needed a strong health research institute, and the decision to reinvest in FIOCRUZ was made at the highest political level. From 1975 to 1985, under new directorship, FIOCRUZ started the renovation of the Manguinhos campus. Most of its buildings and equipment had been abandoned, as a consequence of the low priority that had been accorded public health research by successive Brazilian governments. With Brazilian economic expansion between 1975 and 1985, several national funding agencies started to support FIOCRUZ research programs.

However, it was only in 1985, during Brazil's recent redemocratization process, that it was possible to accelerate this institutional modernization trend and to initiate the reintegration into the FIOCRUZ community of the scientists who had been fired during the Manguinhos Massacre. At this time, the Brazilian health community managed to achieve a moderate increase in the national investment in health research and development, both in biomedicine and in public health. New ideas and new institutional programs stimulated the development of science and technology activities at FIOCRUZ. This expansion of support made it possible to establish new links between research activities and the health policy decision-making process. FIOCRUZ became a leading institution in the formulation of the National Sanitary Reform Project, which was incorporated into the new Brazilian Constitution in 1988. The recent economic crisis in Brazil, however, has again drastically reduced the national investment in science and technology programs related to health.

BOX 4.2

A Vision for the Future in the Philippines

In the Philippines, the Office on ENHR is formulating policies and plans that will promote ENHR and help in achieving its objectives of delivering health services more efficiently. It is hoped that the office will herald the metamorphosis of a concept into a commitment, and finally into a way of life.

Perhaps the strategy and process will at first be meaningful to a handful only. However, those involved in the Filipino ENHR movement believe that, with the advancement that can be achieved in the health sector through policies and programs anchored on rational health research, all sectors of society will eventually affirm the appropriateness of the concept. They foresee a time when everyone will appreciate the essence of health research and will have a critical awareness about health issues and services. The completion of a research agenda generated by actual field experiences would then be possible; and solutions to these problems, once they are generated by health workers and the people themselves, would prove more relevant, feasible and practical. Research, in turn, would exist not only at the scientific or medical level but would also be attuned to people's perceptions, values and behavior. The mechanism for the collection and storage of past and on-going research will be improved through the strengthening of health information systems and medical libraries.

A key factor in realizing the benefits of health research will be collaboration between health workers in developing and developed countries, which gives rise to linkages between international organizations, research institutions and donor agencies. The effort of the ENHR movement in the Philippines is directed at improving the health status of all through the equitable distribution of health services and benefits. This will be made possible only by the adoption of national health policies and programs based on action-oriented research.

Appendices

Appendix I

The Commission on Health Research for Development

The Commission on Health Research for Development (CHRD) was formed in late 1987 with the aim of improving the health of people in developing countries. It focused on research in the belief that it has enormous but often neglected power to accomplish that goal. Over the course of three years, CHRD met as a group eight times; sponsored eight collaborative developing-country workshops; held eleven secretariat workshops on a variety of ENHR-related topics; consulted extensively with developing-country scientists, governmental leaders, social activists, and other professionals; and consulted as well with senior leaders of international agencies, donors, and the professional community.

Commission Members

John R. Evans (Canada), Chair
Gelia T. Castillo (the Philippines), Deputy Chair
Fazle Hasan Abed (Bangladesh)
Sune D. Bergstrom (Sweden)
Doris Howes Calloway (United States)
Essmat S. Ezzat (Egypt)
Demissie Habte (Ethiopia)
Walter J. Kamba (Zimbabwe)
Adetokunbo O. Lucas (Nigeria)
Adolfo Martinez-Palomo (Mexico)
Saburo Okita (Japan)
V. Ramalingaswami (India)

Commission Sponsors

Academia de la Investigacion Cientifica, Mexico
The Aga Khan Foundation, Switzerland
The Carnegie Corporation of New York, United States
The Edna McConnell Clark Foundation, United States
The Ford Foundation, United States
Foundation for Total Health Promotion, Japan
Gesselschaft für Technische Zusammenarbeit, Federal Republic of Germany
The International Development Research Centre, Canada
The John D. and Catherine T. MacArthur Foundation, United States
The Nobel Assembly, Sweden
The Oak Foundation, United Kingdom
The Overseas Development Administration, United Kingdom
The Pew Charitable Trusts, United States
The Rockefeller Foundation, United States
Swedish Agency for Research Cooperation with Developing Countries
Swiss Development Cooperation and Humanitarian Aid
The United Nations Children's Fund
The United Nations Development Programme
The World Bank

Appendix II

World Health Assembly Resolution 43.19

7 May 1990
The Role of Health Research

The Forty-third World Health Assembly,

Noting the conclusions of the Technical Discussions on the role of health research in the strategy for health for all by the year 2000, in particular the recommendations dealing with health systems research, nutrition research, research capability strengthening and recent advances in biological and physical sciences and their implications for health care;

Noting that all national health policies should be based on valid scientific evidence, and that such evidence requires health research;

Recognizing the significant potential of research in promoting health and its vital role in improving health through the application of solutions that are already available and the generation of knowledge for the development of new solutions;

Noting the worldwide mismatch between the burden of illness, which is overwhelmingly in the Third World, and investment in health research which is largely focused on the health problems of industrialized countries, and the fact that many developing countries lack the scientific and institutional capability to address their particular problems, especially in the critical fields of epidemiology, health policy, social sciences, nursing and management research;

1. CALLS ON all Member States to undertake essential health research appropriate to national needs in order to:

(1) identify and understand their own priority health problems;

(2) improve the use of limited resources;

(3) improve health policy and management;

(4) foster innovation and experimentation;

(5) contribute to new knowledge;

2. URGES Member States, particularly developing countries:

(1) to define national health research policies, and strategies for their implementation;

(2) to build and strengthen national research capabilities by investing resources in national institutions, by providing appropriate career opportunities, to attract and retain the involvement of their own scientists, and by creating environments that will foster scholarship and creativity;

(3) to create, or strengthen, mechanisms that enable consideration of research results at the policy-making level, as well as their translation into health systems operation;

(4) to collaborate with other countries through international partnerships in developing research and training capabilities, particularly in relation to their high priority health and organizational problems, thereby also contributing to national development efforts;

3. URGES bilateral and multilateral development agencies, nongovernmental organizations, foundations and appropriate regional organizations:

(1) to increase their support for essential health research, and research capability building;

(2) to support and strengthen, in the health and related science and technology sectors, national coordinating mechanisms to promote research, policy-making, planning and management;

(3) to support the development of international partnerships to strengthen national scientific and research infrastructures and countries' capabilities to absorb technology and solve problems;

4. INVITES the research community:

(1) to increase its commitment towards the development of essential health research appropriate to national needs and its participation in research on global health problems;

(2) to intensify its efforts in communicating research findings and in developing technology to support decision-making and resource allocation processes;

(3) to mobilize its human and material resources with a view to strengthening international scientific networks oriented to health development;

5. REQUESTS the Director-General:

(1) to ensure the wide distribution of the report of the Technical Discussions on the role of health research in the strategy of health for all by the year 2000 among ministries of health and other relevant ministries, universities, research centres and institutions dealing with science and technology;

(2) to use appropriate mechanisms, in close collaboration with the global and regional Advisory Committees on Health Research, to: (a) assess new and emerging areas of science and technology; (b) investigate evolving problems of critical significance to health; (c) identify appropriate methodologies for trend assessment and forecasting, including epidemiology to improve health;

(3) to develop further a clearly enunciated health research strategy for WHO in order to translate the

research goals, priorities and programmes into coherent and coordinated action in support of health for all;

(4) to promote the harmonization of science and research policies in health between WHO, the United Nations system and other international agencies and organizations;

(5) to develop more effective institutional arrangements for strengthening the research capabilities of Member States, with special emphasis on disciplines of critical relevance to public health;

(6) to explore the possibility of making specific provision within WHO's total resources to support the strengthening of health-related research capabilities in Member States;

(7) to report through the Executive Board to the Forty-fifth World Health Assembly on progress made in implementing this resolution.

Fourteenth plenary meeting, 17 May 1990

Appendix III

The Task Force on Health Research forDevelopment

The Task Force on Health Research for Development, whose secretariat is based at the UNDP offices in Geneva, will meet six times during its tenure (January 1991 to December 1992). It will also form sub-committees and working groups (e.g., Health Research Capacity Strengthening and Longer Term Mechanisms for the support of ENHR) to assist in its work.

The Task Force is already working with over 20 countries wishing to begin the ENHR process, and many others are expected to join this network. Close links have been established with WHO, UNICEF, UNDP and with international networks such as INCLEN, IHPP, the Community Based Health Educational Institutions and the other signatories of the Puebla Declaration. The monthly newsletter *ENHR Forum* will be published in New Delhi with the collaboration of the South Asia Regional Office of IDRC. The work of the Task Force may culminate in an international conference early in 1993.

Sponsors of the Task Force include IDRC, SAREC, the Edna McConnell Clark Foundation, the Rockefeller Foundation, the Ford Foundation, the Aga Khan Foundation, the Carnegie Corporation, Gesselschaft für Technische Zusammenarbeit, and the Pew Charitable Trusts. Other agencies and Foundations have pledged additional support.

Task Force Members

V. Ramalingaswami (India), Chairman
Adolfo Martinez-Palomo (Mexico), Vice-Chairman
F.H. Abed (Bangladesh)
Eusebe Alihonou (Benin)
Isao Arita (Japan)
David Bradley (United Kingdom)
Gelia Castillo (Philippines)
Lincoln Chen (United States)
Essmat Ezzat (Egypt)
Marvellous Mhloyi (Zimbabwe)
Carlos Morel (Brazil)

The Task Force is assisted in its work by members of the original Commission, consultants from many disciplines and countries, and by a Management Support Group consisting of representatives of IDRC (Canada), SAREC (Sweden), The Edna McConnell Clark Foundation (U.S.) and the GTZ (Germany).

Appendix IV

Acronyms and Abbreviations

CARI	Control of Acute Respiratory Infection
CDC	Centers for Disease Control (U.S.)
CDD	Program for Control of Diarrheal Diseases
CESTEH	Center for Occupational Health and Human Ecology Studies (Brazil)
CHRD	Commission on Health Research for Development
CIID	Center for Research in Communicable Diseases (Mexico)
CISP	Center for Public Health Research (Mexico)
COC	Oswaldo Cruz House (Brazil)
COMISA	National Commission on Health Research (Mexico)
CRDS	Regional Centre for Health Development (Mozambique)
DANIDA	Danish International Development Agency
DGIS	Netherlands Ministry for Development Cooperation
DOH	Department of Health
ENHR	Essential national health research
ENSP	National School of Public Health (Brazil)
EPI	Expanded Programme on Immunization (WHO)
FETP	Field Epidemiology Training Program (CDC)
FIOCRUZ	Oswaldo Cruz Foundation (Brazil)
FUMIS	Mozambican Foundation for Health Research
FUNSALUD	Foundation for Health (Mexico)
GTZ	Deutsche Gesellschaft für Technische Zusammernarbeit
HBV	Hepatitis B virus
HFA	Health for All
HIV	Human immunodeficiency virus
HRP	Special Programme for Research, Development, and Research Training in Human Reproduction (UNDP/World Bank/WHO)
HSR	Health systems research
IDRC	International Development Research Centre of Canada
IHPP	International Health Policy Program
IMF	International Monetary Fund
INCLEN	International Clinical Epidemiology Network
INS	National Institute of Health (Mozambique)
INSP	National Institute of Public Health (Mexico)
MRCZ	Medical Research Council of Zimbabwe

MOH	Ministry of Health
MOPH	Ministry of Public Health
NEBT	National Epidemiology Board of Thailand
NGO	Non-governmental organization
ORS	Oral rehydration salt
ORT	Oral rehydration therapy
PCHRD	Philippine Council on Health Research and Development
PHC	Primary health care
RHRDC	Regional Health Research and Development Committees (Philippines)
RTI	Royal Tropical Institute (Netherlands)
SAREC	Swedish Agency for Research Cooperation with Developing Countries
SNI	System of National Researchers (Mexico)
TDR	Special Programme for Research and Training in Tropical Diseases (UNDP/World Bank/WHO)
TOT	Trainer-of-trainers
USAID	United States Agency for International Development
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
WHA	World Health Assembly
WHO	World Health Organization

Country Bibliographies

Brazil

Benchimol, J.L. (coord.). *Manguinhos from dream to life: Brazilian science in the Belle-Epoque.* Casa de Oswaldo Cruz, FIOCRUZ, Rio de Janeiro, 1990.

Carvalho da Silva, A. "Health Research in Brazil: a report for the Commission on Health Research for Development." FAPESP, Sao Paulo, Commission Workshop, FIOCRUZ, Rio de Janeiro, October 1989.

Carvalho da Silva, A., D. Mello and C.A. Possas. "Essential National Health Research in Brazil: Evaluation of Funding Program." Presented at the International ENHR Workshop hosted by the National Epidemiology Board of Thailand, Pattaya, Thailand, November 12–15, 1990.

FIOCRUZ Annual Reports.

Marques, M.B., C.A. Possas, P.M. Buss, and H. Cordeiro. "National Priorities in Essential Health Research for Development." Commission Workshop, FIOCRUZ, Rio de Janeiro, October 1989.

Stepan, N. *Beginnings of Brazilian Science.* Artenova, Rio de Janeiro, 1976.

Mexico

Bobadilla, J.L., Frenk, J., Martinez-Palomo A. and Sepulveda, J. "Health Research in Mexico: strengths, gaps and perspectives." Background paper for the IV Meeting of the Commission on Health Research for Development, Mexico City, Sep. 2-4, 1988.

Consejo Asesor en Epidemiologia. "Presentacion, integracion y funciones del CAE-Mexico." *Boletin del Consejo Asesor en Epidemiologia* 1 (1):1-2, 1990.

de la Fuente, J.R. et al. *La contribucion del Programa Universitario de Investigacion en Salud*, 1990.

Frenk, J. "La Investigacion en Salud publica: una nueva realidad." *Gaceta Medica de Mexico*, 1989.

Frenk, J. et al. "Health Transition in middle-income countries: new challenges for health care." Health Policy and Planning 4: 29-39, 1989.

Fundacion Mexicana para la Salud. The Undertakings of FUNSALUD after five years of work, 1990.

Instituto Nacional de salud Publica. *Annual Report*, 1990-1991. Cuernavaca, Morelos, 1990.

Lopez-Cervantes, M. and Vandale, S. "La epidemiologia como un eje fundamental de la investigacion de servicios de salud." Paper presented in Septimas Jornadas de Salud de los Servicios Medicos del Departamento del Distrito Federal, Mexico City, February 21, 1991.

Markowitz, L., Sepulveda, J., et al. "Immunization of six month old infants with different doses of Edmonston-Zagreb and Schwarz measles vaccines." *New England Journal of Medicine* 322 (9):580-587, 1990.

Mexican Commission for Health Research. *Bulletin COMISA*, Spring, 1991.

Narro, J.R. "La Investigacion en Salud Publica." In: *La investigacion en salud: balance y transition* (J.R. de la Fuente, J. Martuscelli and D. Alarcon, eds.) Mexico, D.F. Secretariat de Salud and Fondo de Cultura Economica, 1990.

Ponce de Leon, S. et al. "Perfil de investigacion medica en Mexico: un analysis de sus estrategias." *La Revista de Investigacion Clinica*, 39:211-218, 1987.

Secretariat de Salud y CONACYT. *Encuesta Nacional de Investigacion en Salud*, CONACYT, Mexico, D.F., 1986.

Mozambique

Cliff, J. and J. Barreto. "Strengthening ENHR in Mozambique," background paper for the international ENHR workshop in Pattaya, Thailand, November 1990.

Novoa, A.M. and J. Cliff. "Training medical students in operational research, Mozambique," forthcoming in *Health Policy and Planning*.

"Strengthening Mozambique's Essential Health Research Capabilities," project document prepared by INS, Faculty of Medicine, and CRDS, 1990.

The Philippines

Baltazar, Jane and M.M.L. Quesada. "Enhancing Capacity for Health Research: the Philippine Experience." College of Public Health, University of the Philippines, Manila, 1988.

Chan, V. "Research Implications of Expanded Program of Immunization Problems in the Philippines," *State of the Art: PCHRD Technical Report Series 5*, 1989.

Concept Paper for a Consultative Workshop for Health Care Financing System in the Philippines.

Dayrit, D. "Microview of Health Research in the DOH," report during the Workshop of the DOH in ENHR, Philippines, 29 June 1990.

"Essential National Health Research in the Philippines: A Program Concept." Report of a Working Group Seminar, Philippines, February 1991.

"The Philippine National Drug Policy: A Primer." Public Information and Health Services, Department of Health, Philippines.

Proceedings of International ENHR Workshop in Pattaya, Thailand, November 12–15, 1990.

Saniel, M. "Diarrheal Diseases Research in the Philippines," *State of the Art: PCHRD Technical Report Series 1*, 1988.

Statement on Hepatitis B Control by the Department of Health, 1989.

Tupasi, T. "Acute Respiratory Infection: Research Issues on Strategies for Morbidity and Mortality Reduction," *State of the Art: PCHRD Technical Report Series 2*, 1988.

Zara, P. "Status of Health in the Philippines," report during the Workshop of the DOH in ENHR, Philippines, 29 June 1990.

Zara, P. "The National Health Research and Development Plan." Philippine Council for Health Research and Development, 1990.

Thailand

National Research and Policy Boards Information Booklet: *Targeted Research as a Mechanism to Link Public Health Programs with the Biomedical Research Community*. Health Science Division, The Rockefeller Foundation, January 1988.

Thai National Epidemiology Board, *Annual Report* 1991.

Office of the National Research Council of Thailand: *Background, Functions, Organization and Major Activities*, Ministry of Science, Technology and Energy, 1991.

Osathanont, V. "Review of Problems and Coordinating Mechanism between the Ministry of Public Health and the Bureau of University Affairs," Internal Document of the Center for Coordination in Medicine and Health, the Ministry of Public Health: August 25-27, 1986.

National Economic and Social Development Board: *National Development Plan* (5th and 6th five year plans).

Health Development Planning Subcommittee, Office of the National Economic and Social Development Board: *Health Development Plan* in accordance with National Development Plan (5th and 6th plans).

Ministry of University Affairs: *University Education Development Plan*.

Ministry of Science, Technology and Energy: *Technology for Rural Development*. Thailand Science and Technology Press 1986.

Administration Committee, National Research Council: "National Priority Problems and Guidelines for Research for Development." Internal Document: March, 1986.

Medical Practice Acts, B.E. 2525. *Medical Council Bulletin* 12: 3-11, 1983.

ASEAN Training Center for Primary Health Care Development, Mahidol University: *Report on the Establishment of the ASEAN Training Center for Primary Health Care Development (ATC/PHC)* 1985.

Division of Planning, Ministry of Public Health: "The Programme for the Establishment of the Center for Cooperation in Medicine and Health in Cooperation with the World Health Organization." Document Number P./12/ R. 38/ K. 38, February 13, 1981.

Palakornkul, S. Center for Cooperation in Medicine and Health. *Medical Council Bulletin* 12: 459-61, 1983.

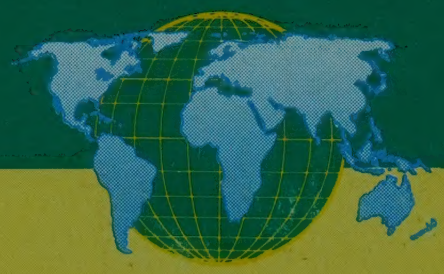
Zimbabwe

Chandiwana, S.K. "Proposals to strengthen biomedical research capability in Zimbabwe," 1988.

Chandiwana, S.K. "Blair Research Laboratory: Current Status and Future Direction," 1989.

Harid, A.C., L. Mbengeranwa and M.M. Mhloyi. "Essential National Health Research: The Zimbabwean Status," report for the international ENHR workshop in Pattaya, Thailand, November, 1990.

Design: Desktop Publishing & Design, Boston, MA



This manual outlines a generic process of implementation for ENHR, based on early experience in a limited number of countries, and it should be read as a practical companion to the Commission on Health Research for Development report: "Health Research, Essential Link to Equity in Development."

A Task Force on Health Research for Development was established as the follow-up entity to the Commission, and is supporting pilot activities to implement ENHR at the country level. The Task Force established its secretariat at UNDP, Geneva. Correspondence regarding the implementation of ENHR can be addressed to:

Task Force on Health Research for Development Secretariat
c/o UNDP
Palais des Nations
CH-1211 Geneve 10
Phone: (41 22) 798 57 83
Fax: (41 22) 798 75 24